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Hawaiian Electric Company, Inc.

August 31, 2006

To: Dave Waller
From: George Willoughby *GW*
Subject: HECO August 2006 Sales Forecast

Attached for your review is HECO's August 2006 sales and peak forecast. The August 2006 sales forecast projects 2006 sales growth of 0.9% below recorded 2005. Sales are projected to grow by 0.9% in 2007, returning almost to the 2005 sales level. The August 2006 forecast is 171 GWh and 213 GWh lower than the April 2006 sales update for 2006 and 2007, respectively. The forecast is also 353 GWh and 467 GWh below the Report 1 May 2005 sales forecast in 2006 and 2007, respectively. The August 2006 peak forecast is also lower than the April 2006 and May 2005 projections due to lower sales expectations.

Sales performance year-to-date July 2006 has continued to be disappointing in both the residential and commercial sectors, as recorded sales are 0.9% below the same period in 2005. July YTD 2006 sales are 1.8% below the April 2006 update and 4.2% below the Report 1 forecast. Sales are expected to remain lower than 2005 for the remainder of 2006.

The August 2006 forecast expects growth in sales to resume beginning in 2007, but at only an average rate of 1.1% through 2011. Residential use per customer is expected to continue to be held down due to high electricity prices and is not likely to match the explosive growth experienced in the early part of the decade. The number of new residential customers is expected to continue to see growth of about 1%, which will help to offset the lower use. Commercial sales are projected to see slightly stronger rates of growth than the residential sector, bolstered by continued economic growth, construction projects, and planned military spending.

Please let me know if you have any questions. This material was reviewed with the Executive Staff on August 21, 2006.

Attachment

cc: T. Michael May
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Hawaiian Electric Company, Inc.
AUGUST 2006 SALES AND PEAK FORECAST

Executive Summary

The local economic outlook remains optimistic with a healthy tourism industry, lasting construction and real estate activity, and the continued prospect for significant military spending. Rising inflationary pressure, driven by fuel and housing costs, and rising interest rates are likely to moderate economic growth after a strong 2005 and 2006. Despite a robust local economy bolstered by growing U.S. and Japan economies, electricity sales stagnated in 2005 and thus far in 2006. Electricity sales July year-to-date 2006 fell by 0.9% below already disappointing 2005 levels.

While the economy has remained strong, both residential and commercial sales have been below recent forecast expectations. The May 2005 forecast used as Report 1 for 2006 financial planning purposes, projected sales to grow by 2.6% in 2006 over forecasted growth of 0.9% in 2005. The disappointing 2005 sales decrease of 0.1% resulted in a projected 3.6% increase for 2006 based on the May 2005 forecast. The April 2006 sales update lowered the projections for 2006 over recorded 2005 to 1.3% above recorded 2005. The April 2006 update was also too optimistic as sales continued to fall through July 2006. The August 2006 forecast expects 2006 and 2007 sales to be 171 GWh and 213 GWh lower than the April 2006 update, respectively. These lower expectations continue throughout the forecast horizon, as shown in Exhibit 1. The August 2006 forecast expects sales to decline 0.9% in 2006, and resume moderate growth on an average of 1.1% per year for 2007 – 2011.

The outlook for both the residential and commercial sectors was lowered in the August 2006 forecast based on recent sales performance. Weather appeared to be a factor in 2005 – 2006 sales performance, with cooler, less humid weather lowering sales after a very hot, humid 2004. In addition, double digit increases in electricity prices beginning in mid-2005 appear to have dampened residential use. Residential customers may be more willing to endure uncomfortable conditions and decrease their air conditioning use as a result of higher electricity prices. While commercial customers generally have less flexibility in responding to high prices, some customers have taken steps to conserve energy in order to make limited financial resources cover all operational needs when utility costs consume a larger proportion of the budget. HECO's energy conservation messages and calls for voluntary conservation may also have encouraged lower use without regard to price.

The August 2006 forecast expects 2006 sales to be 0.9% lower than 2005, and then resume moderate growth over 2007 – 2011. Residential use per customer is expected to continue to decline with prices remaining high, but customers are expected to continue to grow at a similar pace as experienced in recent years. Ko Olina development, several new large condominiums, and military construction are expected to contribute to commercial sector growth over the forecast horizon.

Economic Assumptions

Hawaii's economy in 2006 is performing to expectations for continued growth, although somewhat more slowly than 2005's banner year. The construction industry continues to be strong and tourism, despite some early weakness, looks to recover in the second half of the year. On August 16, the Bureau of Economic Analysis (BEA) reported the Honolulu CPI for the first half of 2006 was 5.8% higher than the same period in 2005, the largest increase in CPI in 15 years. Unfortunately, inflation, while moderating in the second half, is expected to remain relatively high and persist at or above 3.0% through 2008.

There are no major changes to the U.S. economic outlook since the April sales update despite perceptions that inflation is looming larger and the Fed may continue to raise interest rate targets. At present, forecasted U.S. economic growth is slightly higher than it was in April. Expectations for the Japanese economy have escalated over the same period and thus external conditions remain positive for continued economic growth locally.

U.S. Economy

The U.S. economy experienced strong quarterly growth early in 2006 after a weak 4th quarter last year. According to the BEA, the preliminary estimate of real GDP growth for the 1st quarter was 5.6%, significantly higher than the 4.6% forecast from the April 2006 Blue Chip consensus forecast, when the April sales update was developed. However, growth rates in subsequent quarters this year are expected to be lower and below-trend. The moderated growth outlook is attributed to higher energy prices and weakening prospects in both personal spending and the housing sector. Nevertheless, on the strength of 1st quarter gains, for all of 2006 forecasted real GDP growth has increased by 0.1 percentage points to 3.5% between the April and July Blue Chip forecasts (see Exhibit 2). For 2007, forecasted GDP growth has decreased by 0.2 percentage points to 2.8% from the April to July Blue Chip as the aforementioned concerns begin to weigh down the economy. The recently released August 2006 Blue Chip projections slipped somewhat, with real GDP now expected to grow by 3.4% and 2.7% in 2006 and 2007, respectively, due to slower than expected growth in the second quarter of 2006.

As shown in Exhibit 2, the price of crude oil is projected to average \$69 per barrel in 2006 and 2007. Although world oil consumption growth has slowed due to higher prices, it is still expected to remain strong over the forecast period. Higher-than-expected non-OPEC production will meet the demand, supplemented by OPEC production increases or by drawdown of inventories. New production in Angola, Canada, Brazil, and around the Caspian Sea will unfortunately be offset by declines in many mature fields in the North Sea, Mexico, and the Middle East. Global spare production capacity should be only slightly higher in 2006 and 2007 than in 2005. Because of potential or actual supply problems in places such as Nigeria, Iraq, Iran

and Venezuela, in addition to the hazards of a new hurricane season, a sustained level of high prices is expected. The August 8 Short-term Energy Outlook bumped up the projected 2006 and 2007 average price to \$70 per barrel due to additional supply concerns after BP announced possible curtailments at its Prudhoe Bay oil fields when pipeline corrosion and a leak were discovered.

The Consumer Price Index (CPI) rose in May by 0.4% month-over-month after an increase of 0.6% in April (see Exhibit 3). Similarly, energy prices grew by 2.4% in May following a 3.9% expansion in April. The core CPI, which excludes food and energy prices, has been less volatile; registering a 0.3% increase in May as it has in the previous two months. For the first five months in 2006, prices for energy rose by 30.8% at a seasonally adjusted annualized rate (SAAR), compared to 17.1% for all of last year. Overall CPI rose by a 5.2% SAAR thus far in 2006 relative to an increase of 3.4% in all of 2005, while core CPI expanded by a 3.1% SAAR compared to 2.2% in 2005. The recent surge in prices has led to the July Blue Chip forecast of CPI to grow to 3.4% for 2006, which is 0.5 percentage points higher than the April Blue Chip when inflationary expectations were somewhat milder.

The Federal Reserve recently raised the federal funds rate target at its June 28-29 meeting by an additional quarter point to 5.25%, the seventeenth consecutive increase since June 2004 (see Exhibit 3). The latest increase, which brought the rate to its highest level since January 2001, was largely expected after recent inflation measures reflected an accelerating pace. The Fed left the rate at 5.25% on August 8, after two years of steady increases, pointing to a slowing economy. However, policymakers have left the door open for further action depending on the outlook for economic growth and price stability.

As shown in Exhibit 4, the seasonally adjusted unemployment rate was unchanged in June at 4.6% as labor markets have remained tight. Non-farm payroll employment in the U.S. economy grew by an estimated 121,000 jobs in June on a seasonally adjusted basis following an increase of 92,000 jobs in May. The average monthly gain of 108,000 new jobs from April through June is notably lower than the average gain of 169,000 over the twelve month period ending in March (see Exhibit 4).

Average thirty-year mortgage rates have remained above 6% for the last nine consecutive months (see Exhibit 4). Rates are now at their highest level since 2002 and are steadily approaching 7%. Upward pressure is expected to continue if financial markets integrate additional Fed rate increases in their expectations. Results in the housing market have been mixed. The Commerce Department reported that new home sales in May rose by 4.6% month-over-month to 1.23 million, the highest rate this year (see Exhibit 5). Although there were month-over-month gains in March through May, some attribute this strength to better-than-normal weather since the inventory of unsold homes has risen and price appreciation slowed. Meanwhile, existing home sales fell by 1.2% month-over-month to the lowest annualized rate since January, displaying a gradual decline that resembles the predicted "soft landing" for the housing market.

Japan Economy

The July Blue Chip consensus forecast predicts 2.9% real GDP growth in 2006 and 2.3% growth in 2007, increasing the April Blue Chip forecast for 2006 and 2007 slightly from 2.7% and 2.1%, respectively (see Exhibit 5). Export growth has fueled the recent expansion, but global economic growth (i.e., Japan's export market) is expected to slow in 2007. The August Blue Chip consensus forecast bumped up Japan real GDP growth in 2006 to 3.0%.

As Japan's economy has strengthened, there have been positive gains in the CPI and tightening conditions in the labor market. There are expectations that the Bank of Japan (BOJ) will soon abandon its zero interest rate policy and reinstitute positive rates. Inflationary expectations, however, remain relatively low, below 1% for 2006 and 2007. As a result there are some, including Chief Cabinet Secretary Shinzo Abe, who have urged the BOJ to continue the zero rate policy to ensure continued economic growth and avoid a recurrence of deflation.

Hawaii Economy

The University of Hawaii Economic Research Organization (UHARO) in its forecast update in May slightly changed its projections for growth in non-farm jobs, employment, and real personal income compared to the annual forecast issued in February (see Exhibit 6). Real personal income in 2006 is projected to grow by 3.0%, a decrease of 0.2 percentage points from the previous projection. Non-farm jobs growth is upwardly revised by 0.4 percentage points to 2.5%, although employment growth decreased by 0.5 percentage points to 2.5%. Hawaii's low unemployment is forecasted to decrease by 0.1 percentage point to 2.5%, while inflationary expectations are unchanged at 3.8%. Overall, current expectations still point to another year of healthy growth in Hawaii's economy. The local economic outlook needs to be closely monitored, however, as the cost of living climbed at a higher than expected rate of 5.8% in the first half of 2006 and visitor arrivals growth appears to be slowing.

The tourism sector continues to expand, although off the pace of 2005 when record levels were set. The state Department of Business, Economic Development and Tourism (DBEDT) reported an increase in May visitor arrivals of 1.7% and a 3.4% increase in expenditures over the same month in 2005 (see Exhibit 6). Domestic arrivals rose by 3.9% to reach a new May record of 425,141 and a 3.6% increase in total visitor days to 4.97 million also set a new record for the month. May year-to-date (YTD) visitor arrivals are up 2.0%, while expenditures increased by 6.6% and visitor days grew by 2.8%. A worrisome trend is the continuing weakness in Japanese visitor arrivals, which showed declines of -10.9% for the month and -7.8% YTD. While the domestic market has compensated for these declines and Japanese visitor expenditures have experienced only 0.3% contraction YTD, it remains a serious concern for tourism officials. In June, state visitor arrivals grew 2.9%, despite a drop in Japanese visitor arrivals of 10.4%.

The median price of existing single family homes on Oahu was \$660,000 in July, only slightly off the historical peak of \$668,300 set in May. Meanwhile, median condo prices rose to a new record of \$329,000 (see Exhibit 7). Single family home sales volume declined by 9% July year-to-date compared to the same period in 2005, and there were 13% fewer sales of condos. These results are in line with earlier predictions from local economists that prices would continue to rise moderately even as sales flatten. As the local economy remains strong this trend is expected to continue.

As shown in Exhibit 7, Hawaii's unemployment rate in May continued to climb, increasing to 3.0%. The increase resulted in Hawaii's highest monthly unemployment rate since last February with Hawaii no longer owning the lowest rate in the nation, a title it held for 24 months. State unemployment has been increasing over the last four months and the gap between national and state statistics has shrunk to 1.6 percentage points as the national rate has fallen over the same period. It is uncertain at this point whether Hawaii is experiencing a sustained easing of the tight labor supply or merely a transitional period for the local workforce.

A summary of economic estimates for 2005 and projections for 2006-2007 by several local economists is shown in Exhibit 8. UHERO, Bank of Hawaii, and DBEDT have revised their projections since the April 2006 sales update was developed. The forecast changes reflect largely similar expectations for Hawaii's economy in 2006: approximately 3% growth in real personal income, non-farm job growth in the low 2% range, total visitor arrivals approaching 3%, and inflation near 4%.

Forecast risks are likely to originate from external economic conditions in the U.S. or Japan. For the U.S. economy, one concern is that the Fed may overreach in raising targeted interest rates, thereby reducing economic growth too sharply. Locally, higher inflation and the drop in Japanese arrivals will continue to be concerns. Tourism shocks in the form of terrorism, disease outbreaks, or natural disasters remain possible, but present conditions should permit Hawaii's continued economic expansion in 2006 and 2007.

Year-To-Date July 2006 Sales Performance

Year-to-date July 2006 recorded sales were 4,356.1 GWh, a 0.9% or 37.9 GWh decrease as compared to the same period in 2005 (see Exhibit 9). Both the residential and commercial sectors saw declining sales, a trend that started in the second half of 2005. After strong growth through most of 2004, both residential and commercial sales slowed significantly beginning in 2005. Sluggish sales have continued through the first seven months of 2006. Cooler, less humid weather and high electricity prices have played a part in dampening sales, offsetting any increase from a strong local economy.

Residential (Schedules R and E)

Residential recorded sales growth slowed beginning in 2005, and continued to decline in 2006. Year-to-date July, sales decreased by 1.1% or 13.7 GWh below 2005 (see Exhibit 9). As shown in Exhibit 10, this decrease was due to a 2.2% decrease in use per customer, partially offset by a 1.1% increase in the average number of residential customers. The 1.1% growth in customers July YTD 2006 is slightly higher than the last few years because of the conversion of one large commercial customer (Kukui Gardens) to 850 individual residential customers in May 2005 and the addition of 250 new customers from the 215 N. King St. condo in January 2006. Without the conversion and new condo, residential customer growth would have been about 0.8% July YTD, slightly lower than the 1% growth experienced annually since 2000.

After strong year-over-year increases in residential use through most of 2004, growth in use suddenly slowed at the end of 2004 and continued to decline through 2005 into 2006. While installation of residential air conditioning continues, cooler weather and lower humidity may have decreased the use of air conditioning units. High electricity prices due to oil price increases also dampened electricity use. Public awareness of higher prices in general, energy conservation messages, and calls for voluntary conservation also may have contributed to lower residential use. The addition of multifamily residences and condo customers to the residential sector also tends to erode the average use per customer since those types of customers generally use less electricity per customer than single family homes. Partially offsetting the dampening effect of weather and high prices is a strong local economy with low unemployment rates and strong growth in personal income.

Commercial (Schedules G, J, H, P, and F)

Commercial sales also began to stagnate in 2005 and continued to languish in 2006. Recorded YTD July 2006 commercial sales were 0.8% or 24.2 GWh below 2005, as shown in Exhibit 9. Despite the strong local economy, typified by robust job growth and low unemployment, commercial sector sales declined. Cooler weather with less humidity, and demolition for major construction and renovation projects likely contributed to a loss of sales. Awareness of high prices, energy conservation messages, and calls for voluntary conservation may also have affected commercial electricity use, similar to the residential sector. While commercial customers have less flexibility in responding to higher electricity prices, many customers, including the military, may have made energy conservation efforts a higher priority in order to stay within limited operating budgets.

Lower year-over-year electricity sales have occurred in most of the business sectors. As shown in Exhibit 11, ten out of the sixteen business sectors saw lower sales YTD July 2006. Despite 2006 being a RIMPAC exercise year, the largest decrease occurred in the military sector where energy conservation efforts have been instituted by the Navy to make limited budget money available for other operational requirements in a time of rising utility costs. Sales to military housing may also be lower for the same reasons as those in the residential sector, with additional losses

due to demolition and closing of housing for construction of new and renovated units. Manufacturing also saw a large decrease, but this is partially due to higher use in 2005 when co-gen units at the refineries were down for maintenance. The hotel sector continued to see decreases as additional Outrigger properties were demolished as part of the Beach Walk project. The Education sector saw a large increase in 2006, but this was due to the reconnection of UH Manoa's Hamilton Library to the utility grid after being on generator power in the wake of the October 2004 flood.

Total Sales

Economic growth that would have increased electricity sales was likely offset by weather and price components that affected sales relative to 2005. 2006 weather has been significantly cooler and less humid than in 2005. As shown in Exhibit 12, both cooling degree days and wet bulb temperatures for 2006 have mostly been lower than average and lower than the first seven months of 2005. At the same time, electricity prices have increased as a result of soaring oil prices. Prices began to climb steeply in mid-2005, and have continued to see double digit increases so far in 2006 (see Exhibit 13).

Lower residential use per customer in 2006 continued a trend that started in 2005, most likely because of lower air conditioning use with cooler, less humid weather. The jump in electricity prices in the second half of 2005 likely also contributed to the decline in residential use. High prices have persisted into 2006 and customers may be more willing to put up with some discomfort and be less inclined to turn on air conditioners because of the cost. Strong personal income growth in the robust local economy may have offset some of the decrease in 2006.

Vigorous job growth in a prospering local economy should have resulted in an increase in commercial sales in 2006. However, the cooler, less humid conditions in 2006 likely more than offset the economic growth, resulting in a decline of 0.8% year-to-date. Higher electricity prices may be less of a factor in lowering commercial sales in 2006 than they were in the residential sector. While commercial customers have less flexibility in responding to higher electricity prices, some customers (for example the military) appear to have made energy conservation efforts a higher priority in order to make limited financial resources go farther when utility costs are increasing.

In summary, sales have been lower July YTD 2006 as compared to the same period in 2005 despite the continued growth in the local economy. Despite continuing robust activity in the construction and real estate markets, healthy visitor arrivals, vigorous personal income growth, and a strong job market, both residential and commercial sales have declined thus far in 2006, continuing a trend of stagnating electricity sales that started in 2005.

2006 – 2011 Sales Forecast

Despite the continuing robust economic growth, it appears unlikely that the sales projected for 2006 in the May 2005 forecast or the April 2006 update will be achieved. As shown in Exhibit 14, July YTD recorded sales are 4.2% or 191.0 GWh lower than the May 2005 forecast and 1.8% or 82.0 GWh lower than the April 2006 sales update. Both residential and commercial sales are below the May 2005 and April 2006 sales projections. The August 2006 sales forecast, shown in Exhibit 15, incorporates lower sales expectations for both residential and commercial sales.

For the short-term, 2006 – 2007, residential and commercial time series models were developed. The models were specified using January 1997 – June 2006 monthly billed sales data with 1996 – 2006 demand side management program (DSM) impacts added back to sales. The equations included independent variables for weather (CDD and wet bulb temperatures). For the 2006 – 2007 forecasts, average weather was assumed (1985 – 2003 for CDD and 1997 – 2003 for wet bulb).

For longer range forecasts (2008 – 2011), residential and commercial econometric models were developed. The annual growth rates from these models were used to project sales for the remainder of the forecast horizon using the 2007 short-term forecast as the starting point. The models were specified using 1976 – 2005 annual billed sales data with 1996 – 2005 demand side management program (DSM) impacts added back to sales. Similar to the short-term equations, independent variables for weather were included in the equation. Economic variables, real personal income per capita for residential and non-agricultural job count for commercial, were also included in the long-term equation. The inclusion of the economic variable was deemed important as electricity sales appear to be driven by economic conditions, especially over the long-term. The inclusion of the economic variable also allows the growth in sales to be dependent on an explanatory variable rather than on a straight-line growth trend.

Residential Sales

Residential sales are projected to decrease by 1.1% in 2006, and then grow an average 0.6% per year thereafter (see Exhibit 15). This rate of growth is lower than that experienced from 2000 – 2004, when record low interest rates, a local housing market boom, and the accessibility of affordable residential air conditioning units may have contributed to growth. The August 2006 sales forecast projects lower residential sales than the Report 1 forecast or April 2006 update (see Exhibit 16).

Lower sales are driven by sluggish residential use, which is projected to continue to decline throughout the forecast horizon. The decline in use slows after 2006, but continues to be consistently lower for 2007 – 2011 than in recent years. The main driver of this decline in use is the assumed higher electricity prices. Oil prices are expected to stabilize somewhat, but are not expected to weaken significantly over the forecast horizon. Climbing interest rates and historically high housing prices are likely to further erode customers' disposable income. HECO's

residential appliance survey indicated that air conditioning saturation climbed 17 percentage points, from 41% to 58% between surveys taken in 2000 and 2004. Saturation of air conditioning in the residential sector is expected to continue to grow in the forecast horizon, but at a slower pace. As shown in Exhibit 17, residential use per customer is projected to remain below the level of use experienced in 2003 – 2005.

Some growth is seen in total residential sales for 2007 - 2011 as a result of an expected moderate 0.9% growth in number of residential customers. The growth in the number of customers has remained stable at about 1% per year since 2000. The slightly higher growth rate in the 2006 forecast of 1.1% is due to the impact of additional Schedule R Kukui Gardens customers that converted from a master metered commercial account to individual residential meters. The Kukui Gardens conversion began on May 16, 2005 and was completed by July 2005. The January 2006 addition of customers from the individually metered 215 N. King St. condo also bumped up customer growth in 2006. The majority of new condos being built, however, will impact the commercial sector more than the residential sector because they are likely to be master metered accounts.

The projected growth in residential sales is consistent with the continued strength in personal income growth and strong housing demand, offset by high electricity prices.

Commercial Sales (excluding Schedule F – Street Lighting)

In the commercial sector, the August 2006 sales forecast expects a return to growth in 2007 after lower sales in 2006 (see Exhibit 15). Commercial sales are projected to decrease by 0.8% in 2006, and return to 1.1% growth in 2007. Commercial sales will maintain moderate growth throughout the remainder of the forecast horizon, averaging 1.3% a year. The August 2006 sales forecast projects commercial sales to be lower for all years of the forecast than both the Report 1 (May 2005) forecast and the April 2006 update, as shown in Exhibit 16.

The forecast models' results were adjusted to include large major construction projects that are believed not to be captured in the historical sales data trends. A list of the projects considered is shown in Exhibit 18. Projects whose impacts were already imbedded in the historical sales data used to develop the time series model were excluded from this adjustment. Some of the larger projects added to the econometric model results include the Hawaii Regional Security Operations Center (HRSOC), new Ford Island and Hickam C-17 projects, Ko Olina, Outrigger Beach Walk, and several new condos. Offsetting some of this new growth are expected losses due to other branches of the military adopting energy conservation measures similar to those seen in 2006 at Pearl Harbor and the addition of a new refinery co-gen unit.

The commercial sales forecast for 2006 incorporates the year-over-year losses experienced through July and expects sales to remain lower for the remainder of the

year. The commercial sales forecast for 2007 – 2011 reflects the strength in Oahu's economy and the expected increases due to military and private sector construction projects. Economic growth is assumed to be steady and moderate over the forecast horizon. The growth in commercial sales is in keeping with the strong jobs growth expected for the local economy in 2006, offset by cooler and less humid weather, and continued job growth in 2007, with stable economic conditions in later years.

Street Lighting (Schedule F)

Street lighting electricity use is a very small part of HECO's total sales and tends to fluctuate up and down from year to year. Many street and traffic lights are not metered and are billed on a flat use basis. Periodically the flat use accounts are evaluated and their usage is adjusted for prior and future periods. This adjustment tends to result in swings in sales. The underlying trend has been declining street lighting sales due to improvements in lighting technology that appears to be offsetting any growth from additional residential developments. The August 2006 forecast expects street lighting sales to be flat throughout the forecast horizon.

Energy Efficiency Improvements

The City & County of Honolulu passed Bills 53 & 54 in late 2001 and the law became effective December 8, 2001. These ordinances mandate increased equipment and building shell energy efficiencies for residential and commercial buildings, consistent with the American Society of Heating, Refrigerating and Air Conditioning Engineers (ASHRAE) Standard 90.1 (1999). The impacts from these bills were estimated based on information obtained from the Department of Business, Economic Development, and Tourism (DBEDT), and remain the same as those used in the previous sales forecasts. The incremental impacts over 2005 are incorporated into the forecast. The forecast also includes the estimated impact from the Hawaii Model Energy Code (HMEC) and naturally occurring energy efficiency trends, primarily in the commercial sector.

Combined Heat and Power Generating Units

This forecast includes the impact of third party owned combined heat and power (CHP) generating units from Energy Projects' July 27, 2006 projections. Several third party co-generators are already in operation, and their impacts were included in the historical data used to derive the forecast, including Honolulu Hale's co-gen installation which began operating in early 2004. Only third party owned CHP units are included in the August 2006 forecast. No utility owned CHP units are expected to be installed over the forecast horizon.

Net Energy Metering (NEM)

The August 2006 forecast includes the impact of net energy metering installations from Energy Services' July 24, 2006 projections. The projections are based on assumptions that all systems are less than 50 kW in capacity, there are no increases in the NEM thresholds and Federal tax credits expire December 2007. Both residential and commercial NEM systems are included.

Future DSM

Future DSM impacts included in this forecast are consistent with those filed in HECO's Energy Efficiency Docket No. 05-0069, and assume the continuation of existing programs and the implementation of two new programs (Energy Solutions for the Home and Residential Low Income). Load management programs are excluded from the peak forecast.

Total System Sales

The forecast of total HECO system sales is shown in Exhibit 15. In 2006, total sales are projected to decrease 0.9% below recorded 2005 sales. Sales are projected to increase by 0.9% in 2007, returning to nearly the 2005 level at 7,720.8 GWh. Sales are expected to grow moderately after 2007, increasing at an annual average of 1.1% through 2011. This growth is reasonable given the assumptions of stable economic growth and high electricity prices.

Although slowing after sizzling growth the last few years, the outlook for the local economy remains positive with continued growth in tourist arrivals, combined with sustained strength in the construction and real estate industries and military spending. A stable U.S. economy supported by continued job and income growth should maintain domestic arrivals, provided high oil prices and rising interest rates do not rapidly dampen economic growth. While international arrivals have been disappointing in 2006, the Japan economy is projected to see growth in 2006 – 2007, and could support international visitor arrivals. Barring disease outbreaks or major acts of terrorism, the tourism industry should continue to contribute to economic growth. The housing market appears to be cooling with a lower volume of sales, but prices have not shown any move toward significant decline. Various projects already announced should continue to maintain the construction industry for several years, and increased Pacific Rim activity is likely to reinforce the need for a strong military presence in Hawaii.

The August 2006 forecast is lower than the Report 1 (May 2005) sales forecast and the April 2006 sales update. As shown in Exhibit 16, the forecast ranges from 353 GWh to 497 GWh lower than the Report 1 forecast over the 2006 – 2011 period, and 171 GWh to 213 GWh lower than the April 2006 update. This decrease is due to lower expectations for both residential and commercial sales based on recent sales trends.

For the remainder of 2006, sales growth is projected to be 1% lower than 2005, as shown in Exhibit 19. This is in keeping with the July year-to-date decline of 0.9% (see Exhibit 9). Both residential and commercial sales are expected to remain below 2005 for the remainder of 2006.

2006 – 2011 Peak Forecast

The record system peak of 1327 gross MW was set on October 12, 2004. The 2005 system peak of 1273 gross MW occurred on September 14, 2005. The 2005 system peak was 54 gross MW lower than the record peak set in October 2004. The August 2006 forecast expects peaks to remain lower than the 2004 record peak until after 2008, when excluding standby loads. As shown in Exhibit 20, this forecast is 34 to 44 gross MW lower than the April 2006 peak update and 71 to 92 MW lower than the May 2005 peak forecast.

The August 2006 forecast peaks were derived using the Hourly Electric Load Model (HELM) and weather normalized load profiles from the 2003 HECO Class Load Study. The weather impact for the 2003 class load study profiles was determined using hourly regression equations fit for the 1997 – 2003 period by HECO's consultant, RLW Analytics, Inc. The profiles were normalized assuming the "typical" weather was the Department of Energy's Typical Meteorological Year (TMY) derived from the 1961 – 1990 period. HELM forecasts were calibrated to historical peaks weather normalized assuming "typical" 1997 – 2005 weather. The peaks were then taken from an integrated level to instantaneous peaks using a 2001 – 2005 average factor. The peaks were further adjusted for the impact of DSM, possible self- and co-generator outages, and third party CHP.

Tesoro, Chevron, and Pearl Harbor have large, pre-existing, self- and/or co-generators. The additional coincident demands placed on HECO's system when these co-generators are experiencing outages were re-evaluated using demand data through December 2005. The data indicated that total system peak coincident demand from Tesoro and Chevron was 24 MW, and an additional 2 MW was also included assuming an outage in one of Pearl Harbor's peak load units. The resultant total standby load of 26 MW is further increased by 2 MW to 28 MW for 2008 and beyond under the assumption that Chevron will add a new co-gen unit to cover their entire refinery use sometime in 2007. This 2 MW increase covers the load that is currently regularly on HECO's system (above the outage coincident demand). The impact of Tesoro and Chevron vary depending on the month of the year, thus the standby impact is calculated separately for the AM and PM peaks as shown in Exhibit 21. The interruptible loads under Rider I were also re-examined and are shown in Exhibit 22.

The gross and net MW peak and minimum load forecasts including adjustments for standby loads are shown in Exhibit 23. The projected system peak is lower than the Report 1 forecast by 71 MW in 2006, and remains lower over the forecast horizon, as shown in Exhibit 20. The projected system peaks are lower than the Report 1 forecast and April 2006 update due to lower sales projections. In addition, residential sales are expected to increase at a slower rate than commercial sales, further lowering the evening (system) peaks.

Conclusion

The August 2006 sales and peak forecast for 2006 - 2011 is shown in Exhibit 23. The total sales projected in the August 2006 forecast are 4% to 6% lower than the Report 1 (May 2005) sales forecast over the forecast horizon, and 2% to 3% lower than the April 2006 update. Both residential and commercial forecast sales are lower than the May 2005 forecast and the April 2006 update. Lower forecasted peaks in the August 2006 forecast are the result of these lower sales projections. For financial planning purposes, it is recommended that the company adopt the 2006 - 2011 total sales and peak forecast shown in Exhibit 23.

EXHIBIT 1

Hawaiian Electric Company, Inc.
Comparison of August 2006 Sales Forecast vs. April 2006 Sales Update

	Recd <u>2005</u>	<u>2006</u>	<u>2007</u>	<u>2008</u>	<u>2009</u>	<u>2010</u>	<u>2011</u>
August 2006 Sales Forecast (Reduced by Future DSM)							
Residential	2,142.5	2,118.4	2,128.9	2,145.1	2,151.2	2,163.8	2,178.8
% incr		-1.1%	0.5%	0.8%	0.3%	0.6%	0.7%
Commercial	5,541.0	5,494.0	5,554.1	5,648.3	5,732.3	5,814.4	5,852.6
% incr		-0.8%	1.1%	1.7%	1.5%	1.4%	0.7%
Sched F	37.8	37.8	37.8	37.9	37.8	37.8	37.8
% incr		0.0%	0.0%	0.3%	-0.3%	0.0%	0.0%
Total	7,721.3	7,650.2	7,720.8	7,831.3	7,921.3	8,016.0	8,069.2
% incr		-0.9%	0.9%	1.4%	1.1%	1.2%	0.7%
April 2006 Sales Update (Reduced by Future DSM)							
Residential	2,142.5	2,166.0	2,212.0	2,238.5	2,250.6	2,255.3	
% incr		1.1%	2.1%	1.2%	0.5%	0.2%	
Commercial	5,541.0	5,618.0	5,684.0	5,766.6	5,841.6	5,905.9	
% incr		1.4%	1.2%	1.5%	1.3%	1.1%	
Sched F	37.8	37.6	37.6	37.6	37.6	37.6	
% incr		-0.5%	0.0%	0.0%	0.0%	0.0%	
Total	7,721.3	7,821.6	7,933.6	8,042.7	8,129.8	8,198.8	
% incr		1.3%	1.4%	1.4%	1.1%	0.8%	
August 2006 less April 2006							
Residential		-47.6	-83.1	-93.4	-99.4	-91.5	
Commercial		-124.0	-129.9	-118.3	-109.3	-91.5	
Sched F		0.2	0.2	0.3	0.2	0.2	
Total		-171.4	-212.8	-211.4	-208.5	-182.8	

Note: Includes leap year impacts.

EXHIBIT 2

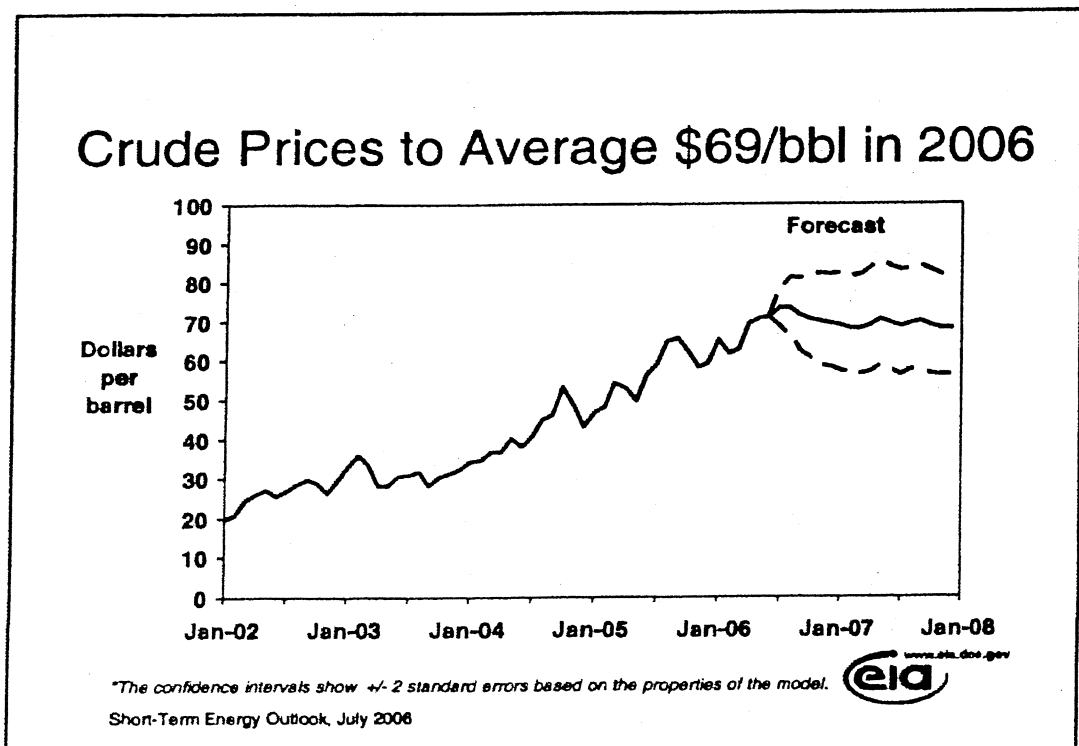
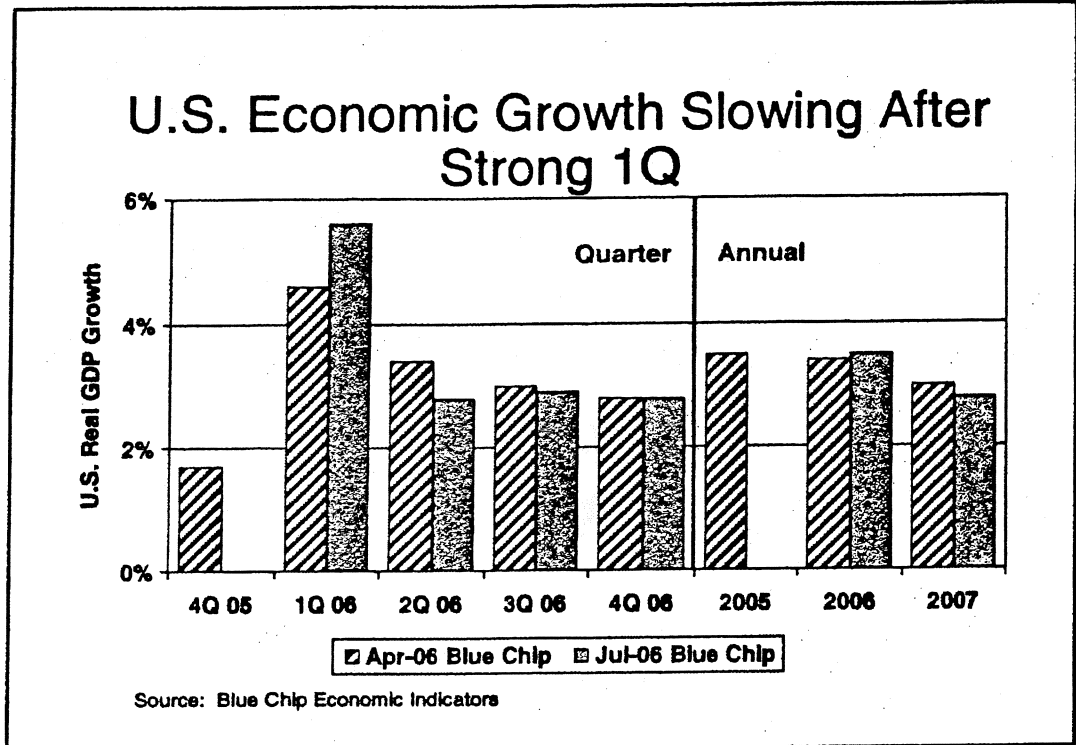


EXHIBIT 3

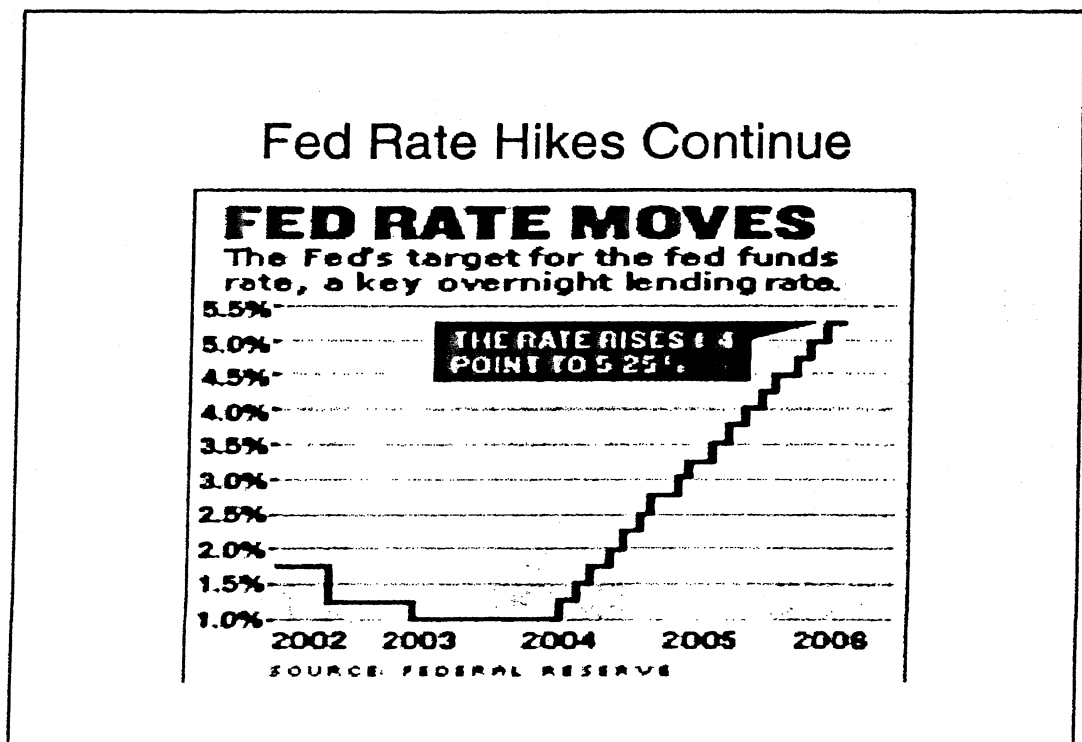
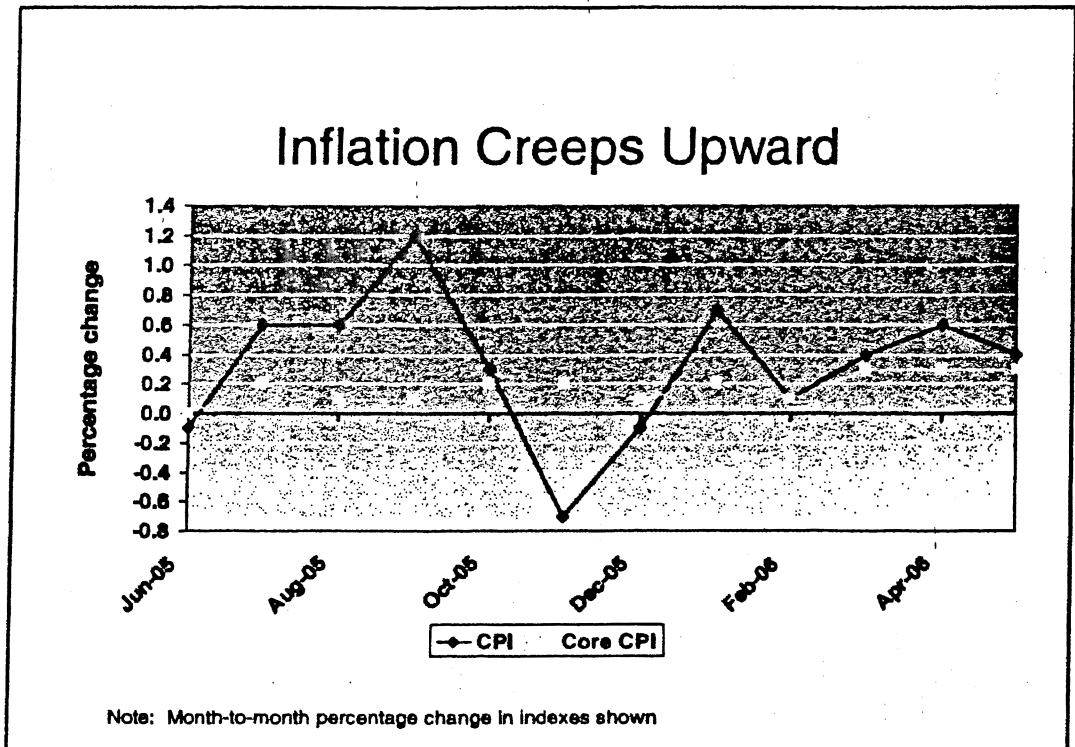
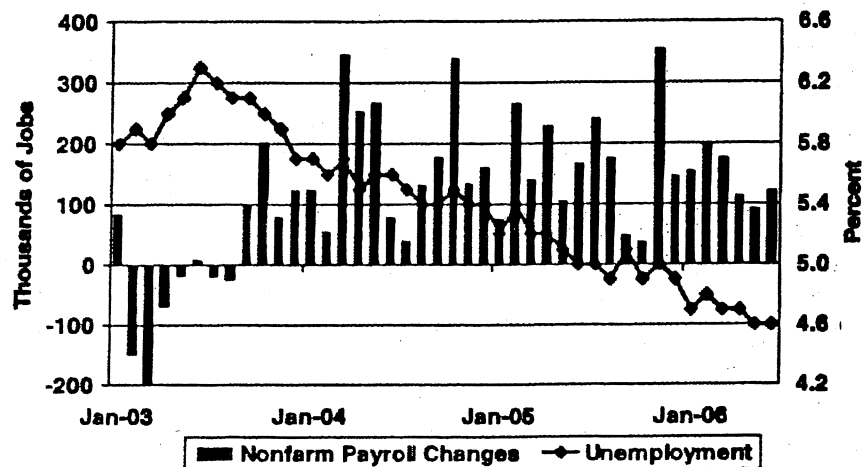


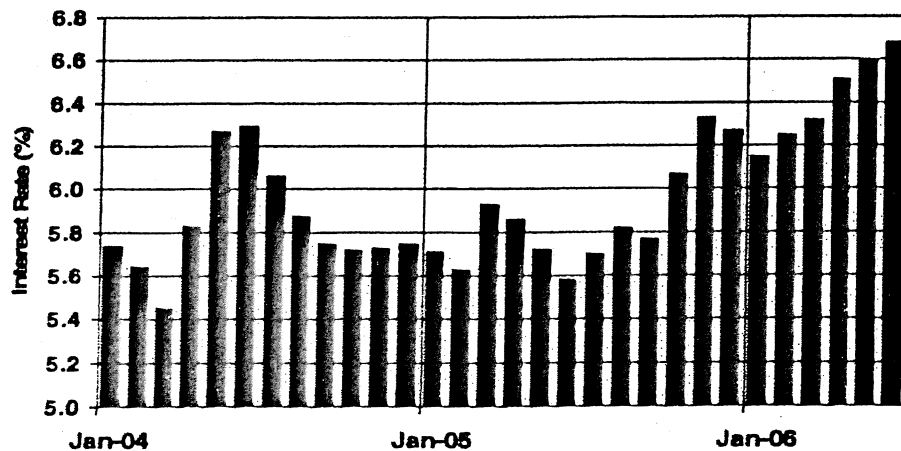
EXHIBIT 4

National Unemployment Remains 4.6%



Note: Seasonally adjusted

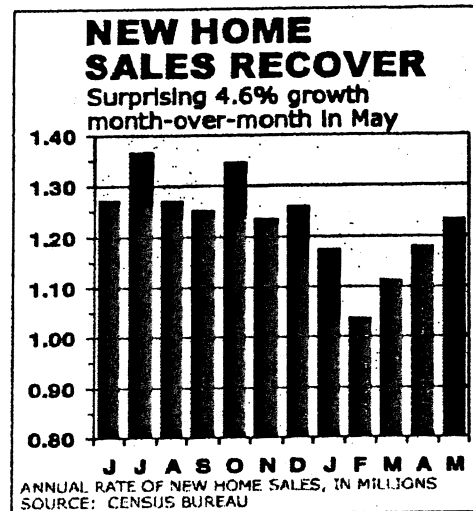
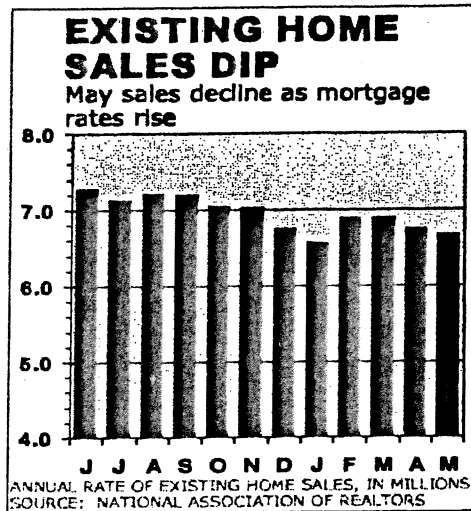
30-Year Mortgages Continue Rising



Source: FHLMC

EXHIBIT 5

Mixed Results in Housing Sector



Japan's Economic Growth Revised Upward

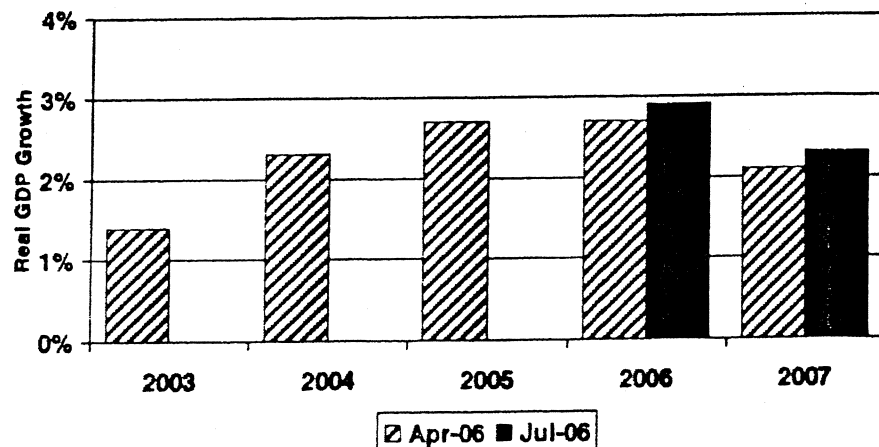


EXHIBIT 6

Hawaii's Economy in 2006

Indicator	Feb Annual Forecast	May Forecast Update	Difference (% points)
Non-farm Jobs (% chg)	2.3	2.5	+0.4
Employment (% chg)	3.0	2.5	- 0.5
Unemployment (%)	2.6	2.5	- 0.1
Real Personal Income (% chg)	3.2	3.0	- 0.2
Inflation Rate (%)	3.3	3.5	+0.2

Source: UHERO

Moderate Tourism Growth After Record 2005

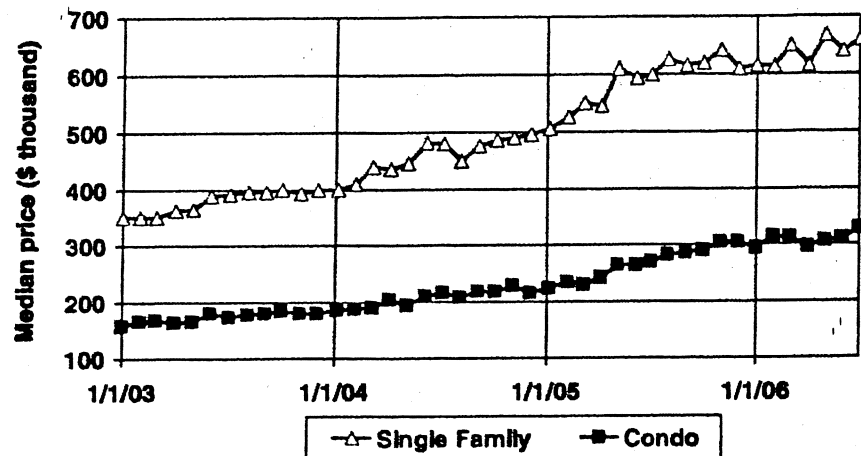
	May 2006 Month	May 2006 YTD
Visitor Arrivals	1.7% ↑	2.0% ↑
Total Expenditures	3.4% ↑	6.6% ↑
Visitor Days	3.6% ↑	2.8% ↑

Note: Percentage change relative to 2005 for the same monthly and two month periods

Source: DBEDT

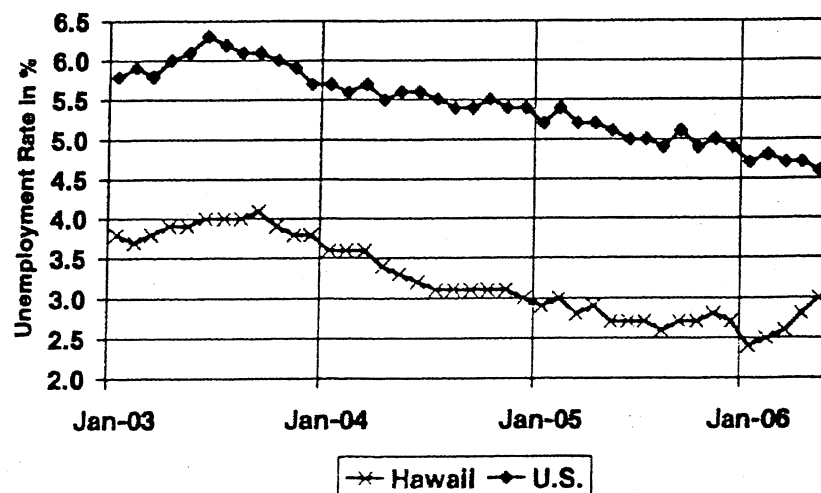
EXHIBIT 7

Home Resale Prices Remain High



Source: Honolulu Board of Realtors

Hawaii's Unemployment Rises to 3.0%



Note: Seasonally adjusted

EXHIBIT 8

COMPARATIVE 2006-07 HAWAII ECONOMY FORECASTS
ANNUAL PERCENTAGE CHANGE

	Jobs			Employment			Real Pers Income			CPI-U (Honolulu)		
	2005	2006	2007	2005	2006	2007	2005	2006	2007	2005	2006	2007
Actual	3.1				3.0			3.1			3.8	
BOH ¹		1.6	1.2						2.6	2.4	3.6	3.2
UHERO ²		2.5	1.3		2.5	1.6			3.0	2.2	3.8	3.2
Laney ³		2.0							3.1		4.0	
DBEDT ⁴		2.2	1.5						2.9	2.8	3.8	3.3

	Construction ⁵			Total Visitor Arrivals			Domestic Arrivals ⁶			International Arrivals ⁷		
	2005	2006	2007	2005	2006	2007	2005	2006	2007	2005	2006	2007
Actual	14.3				6.3			7.0			2.7	
BOH ¹					3.5	3.1			4.0	3.2	2.2	3.0
UHERO ²		11.0	4.0		2.8	2.0			3.1	1.8	0.5	1.5
Laney ³					3.0							
DBEDT ⁴					2.8	2.7						

¹ Paul Brewbaker, Chief Economist (Bank of Hawaii), April 24, 2006, <https://www.boh.com/econ/reports/econ042406.pdf>

² Professors Carl Bonham and Byron Gangnes (University of Hawaii Economic Research Organization), May 24, 2006

³ Professor Leroy Laney (Hawaii Pacific University) FHB Economic Forecast 2005-2006 Edition, Nov 2005, <http://www.fhb.com/pdf/EconForecastHawaii05.pdf>

⁴ Hawaii DBEDT Quarterly Forecast, May 17, 2006

⁵ Contracting tax base, UHERO Construction Forecast, March 30, 2006

⁶ UHERO projections for U.S. arrivals

⁷ UHERO projections for Japan arrivals

Note: Actuals are preliminary

EXHIBIT 9

Hawaiian Electric Company, Inc.

COMPARISON OF 2006 VS. 2005
JULY YEAR-TO-DATE
Recorded GWh Sales

Schedule	Jul YTD 2006	Jul YTD 2005	Diff	% Diff
R	1,208.5	1,222.2	-13.7	-1.1%
G	207.9	212.2	-4.3	-2.0%
J	1,146.2	1,145.1	1.1	0.1%
H	27.2	30.9	-3.7	-12.0%
P	1,744.8	1,761.7	-16.9	-1.0%
F	21.5	21.9	-0.4	-1.8%
Total	4,356.1	4,394.0	-37.9	-0.9%
Commercial ¹	3,147.6	3,171.8	-24.2	-0.8%

¹ Includes Schedule F

EXHIBIT 10

Hawaiian Electric Company, Inc.

RESIDENTIAL RECORDED SALES
JULY YTD 2006 VS. 2005

	Jul YTD 2006	Jul YTD 2005	Difference	
			Amt	%
Recorded MWh Sales	1,208,549.7	1,222,233.2	-13,683	-1.1%
Bills	1,809,930	1,789,532	20,398	1.1%
kWh Use per Bill	668	683	-15.258	-2.2%

Change in Customers x Use per Bill = Difference in Sales					
20,398	x	668	=	13,620	MWh

Change in Use Per Bill x Customers = Difference in Sales					
-15.258	x	1,789,532	=	-27,304	MWh

Total:	-13,683	MWh
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EXHIBIT 11

Hawaiian Electric Company, Inc.

BILLED GWHS BY BUILDING TYPE
YTD JULY

<i>Building Type</i>	<i>2006</i>	<i>2005</i>	<i>Diff</i>	<i>% Chg</i>
Offices	461.0	461.3	-0.3	-0.1%
Restaurant	142.4	142.6	-0.2	-0.1%
Retail (Non Food)	270.1	274.4	-4.3	-1.6%
Grocery (Retail - Food)	119.8	120.8	-1.0	-0.8%
Warehouse	73.1	74.0	-0.9	-1.2%
Education	221.3	213.7	7.6	3.6%
Health	129.6	130.9	-1.3	-1.0%
Lodging (Hotels)	226.7	234.5	-7.8	-3.3%
Housing (Apt/Condo)	248.9	247.1	1.8	0.7%
Service/Amusement	213.5	212.0	1.5	0.7%
Air Facilities	67.9	67.1	0.8	1.2%
Manufacturing	67.2	76.1	-8.9	-11.7%
Pumping (incl BWS)	115.6	112.6	3.0	2.7%
Military/Base	681.7	692.4	-10.7	-1.5%
Food Processing	38.7	39.2	-0.5	-1.3%
Others	48.4	45.0	3.4	7.6%
Grand Total	3,125.9	3,143.7	-17.8	-0.6%

EXHIBIT 12

Hawaiian Electric Co., Inc.

HISTORICAL WEATHER VARIABLES

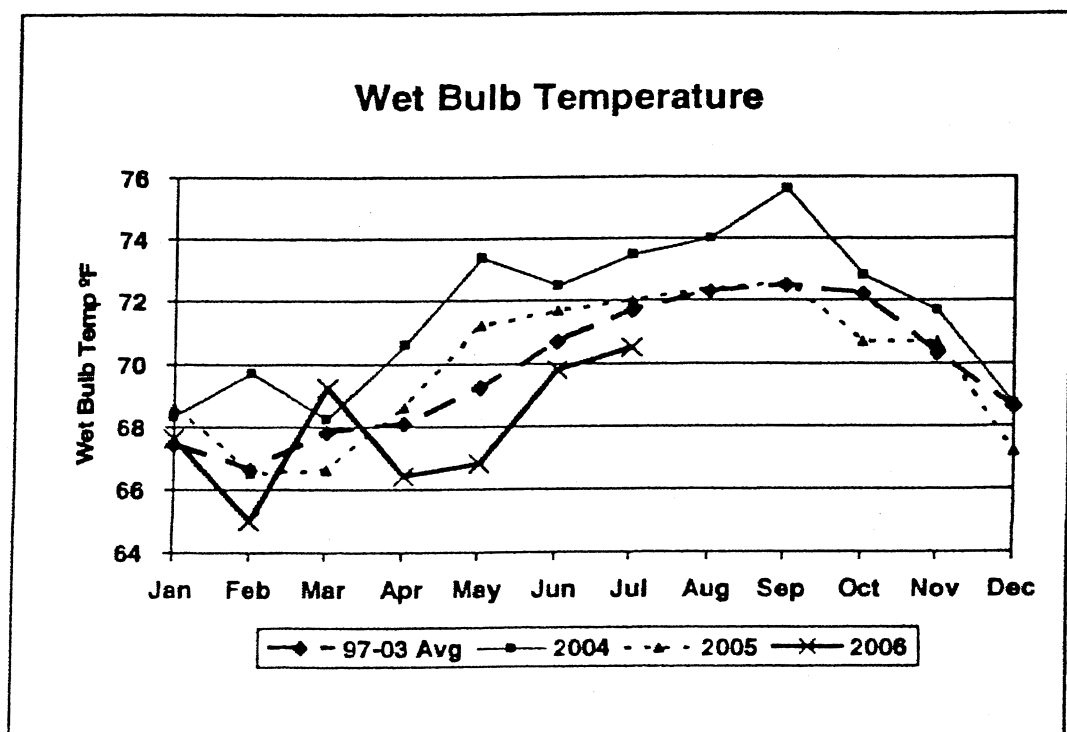
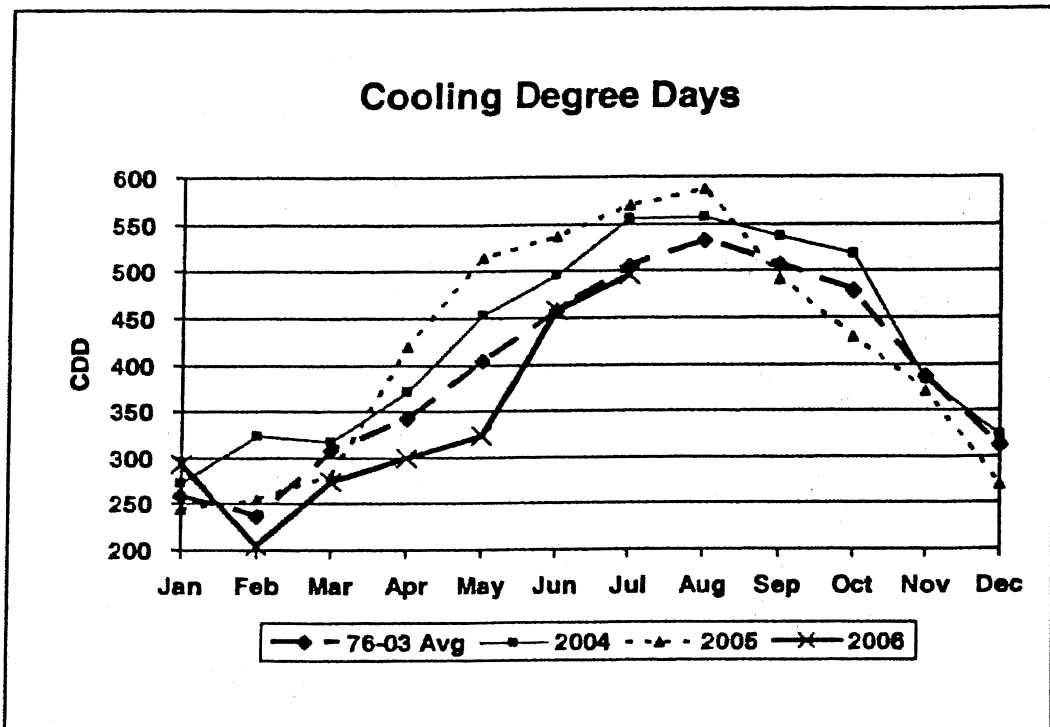
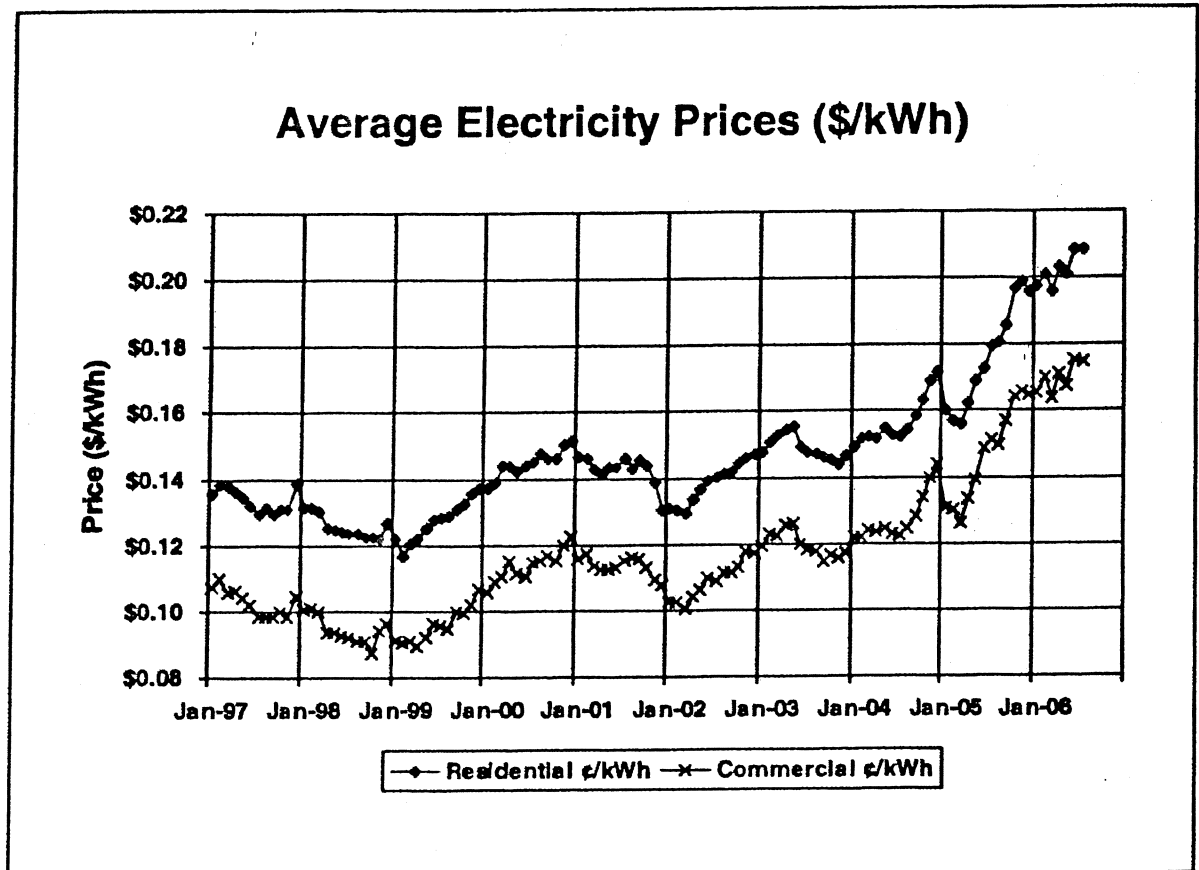


EXHIBIT 13

Hawaiian Electric Co., Inc.

HISTORICAL ELECTRICITY PRICES



Hawaiian Electric Company, Inc.

COMPARISON OF RECORDED VS. REPORT 1 FORECAST ¹
JULY YEAR-TO-DATE 2006
Recorded GWh Sales

<u>Schedule</u>	<u>Jul YTD 06 Recorded</u>	<u>Jul YTD Rept 1 Fcst</u>	<u>Diff</u>	<u>% Diff</u>
R	1,208.5	1,266.5	-58.0	-4.6%
G	207.9	213.3	-5.4	-2.5%
J	1,146.2	1,161.1	-14.9	-1.3%
H	27.2	31.8	-4.6	-14.5%
P	1,744.8	1,852.5	-107.7	-5.8%
F	21.5	21.9	-0.4	-1.8%
Total	4,356.1	4,547.1	-191.0	-4.2%
Commercial ²	3,147.6	3,280.6	-133.0	-4.1%

¹ May 2005 sales forecast

² Includes Schedule F

Hawaiian Electric Company, Inc.

COMPARISON OF RECORDED VS. APRIL 2006 UPDATE
JULY YEAR-TO-DATE 2006
Recorded GWh Sales

Schedule	Jul YTD 06 Recorded	Jul YTD Apr 06 Update	Diff	% Diff
R	1,208.5	1,230.8	-22.3	-1.8%
G	207.9	216.8	-8.9	-4.1%
J	1,146.2	1,187.7	-41.5	-3.5%
H	27.2	25.5	1.7	6.7%
P	1,744.8	1,755.4	-10.6	-0.6%
F	21.5	21.9	-0.4	-1.8%
Total	4,356.1	4,438.1	-82.0	-1.8%
Commercial ¹	3,147.6	3,207.3	-59.7	-1.9%

¹ Includes Schedule F

EXHIBIT 15

Hawaiian Electric Company, Inc.
AUGUST 2006 SALES FORECAST

	Recd 2005	2006	2007	2008	2009	2010	2011
Sales Forecast with Adjustments, No Future DSM							
Residential	2,142.5	2,119.9	2,142.4	2,175.2	2,193.4	2,216.4	2,240.9
% incr		-1.1%	1.1%	1.5%	0.8%	1.0%	1.1%
Commercial	5,541.0	5,507.5	5,595.0	5,718.5	5,831.5	5,942.7	6,009.9
% incr		-0.6%	1.6%	2.2%	2.0%	1.9%	1.1%
Sched F	37.8	37.8	37.8	37.9	37.8	37.8	37.8
% incr		0.0%	0.0%	0.3%	-0.3%	0.0%	0.0%
Total	7,721.3	7,665.2	7,775.2	7,931.6	8,062.7	8,196.9	8,288.6
% incr		-0.7%	1.4%	2.0%	1.7%	1.7%	1.1%
Future DSM							
Residential		-1.5	-13.5	-30.1	-42.2	-52.6	-62.1
% incr							
Commercial		-13.5	-40.9	-70.2	-99.2	-128.3	-157.3
% incr							
Sched F		0.0	0.0	0.0	0.0	0.0	0.0
% incr							
Total		-15.0	-54.4	-100.3	-141.4	-180.9	-219.4
% incr							
Recommended Sales Forecast with Future DSM							
Residential	2,142.5	2,118.4	2,128.9	2,145.1	2,151.2	2,163.8	2,178.8
% incr		-1.1%	0.5%	0.8%	0.3%	0.6%	0.7%
Commercial	5,541.0	5,494.0	5,554.1	5,648.3	5,732.3	5,814.4	5,852.6
% incr		-0.8%	1.1%	1.7%	1.5%	1.4%	0.7%
Sched F	37.8	37.8	37.8	37.9	37.8	37.8	37.8
% incr		0.0%	0.0%	0.3%	-0.3%	0.0%	0.0%
Total	7,721.3	7,650.2	7,720.8	7,831.3	7,921.3	8,016.0	8,069.2
% incr		-0.9%	0.9%	1.4%	1.1%	1.2%	0.7%

EXHIBIT 16
PAGE 1 OF 2

Hawaiian Electric Company, Inc.
Comparison of August 2006 Sales Forecast vs. Report 1 (May 2005) Sales Forecast

	<u>Recd</u> <u>2005</u>	<u>2006</u>	<u>2007</u>	<u>2008</u>	<u>2009</u>	<u>2010</u>	<u>2011</u>
August 2006 Sales Forecast (Reduced by Future DSM)							
Residential	2,142.5	2,118.4	2,128.9	2,145.1	2,151.2	2,163.8	2,178.8
% incr		-1.1%	0.5%	0.8%	0.3%	0.6%	0.7%
Commercial	5,541.0	5,494.0	5,554.1	5,648.3	5,732.3	5,814.4	5,852.6
% incr		-0.8%	1.1%	1.7%	1.5%	1.4%	0.7%
Sched F	37.8	37.8	37.8	37.9	37.8	37.8	37.8
% incr		0.0%	0.0%	0.3%	-0.3%	0.0%	0.0%
Total	7,721.3	7,650.2	7,720.8	7,831.3	7,921.3	8,016.0	8,069.2
% incr		-0.9%	0.9%	1.4%	1.1%	1.2%	0.7%
May 2005 Sales Forecast (Reduced by Future DSM)							
Residential	2,189.2	2,218.4	2,228.6	2,255.3	2,267.5	2,272.2	
% incr		1.3%	0.5%	1.2%	0.5%	0.2%	
Commercial	5,572.7	5,746.8	5,922.0	6,008.1	6,073.9	6,202.8	
% incr		3.1%	3.0%	1.5%	1.1%	2.1%	
Sched F	37.6	37.6	37.6	37.7	37.6	37.6	
% incr		0.0%	0.0%	0.3%	-0.3%	0.0%	
Total	7,799.5	8,002.8	8,188.2	8,301.1	8,379.0	8,512.6	
% incr		2.6%	2.3%	1.4%	0.9%	1.6%	
August 2006 less May 2005							
Residential	-46.7	-100.0	-99.7	-110.2	-116.3	-108.4	
Commercial	-31.7	-252.8	-367.9	-359.8	-341.6	-388.4	
Sched F	0.2	0.2	0.2	0.2	0.2	0.2	
Total	-78.2	-352.6	-467.4	-469.8	-457.7	-496.6	

Note: Includes leap year impacts.

EXHIBIT 16
PAGE 2 OF 2

Hawaiian Electric Company, Inc.
Comparison of August 2006 Sales Forecast vs. April 2006 Sales Update

	Recd 2005	2006	2007	2008	2009	2010	2011
August 2006 Sales Forecast (Reduced by Future DSM)							
Residential	2,142.5	2,118.4	2,128.9	2,145.1	2,151.2	2,163.8	2,178.8
% incr		-1.1%	0.5%	0.8%	0.3%	0.6%	0.7%
Commercial	5,541.0	5,494.0	5,554.1	5,648.3	5,732.3	5,814.4	5,852.6
% incr		-0.8%	1.1%	1.7%	1.5%	1.4%	0.7%
Sched F	37.8	37.8	37.8	37.9	37.8	37.8	37.8
% incr		0.0%	0.0%	0.3%	-0.3%	0.0%	0.0%
Total	7,721.3	7,650.2	7,720.8	7,831.3	7,921.3	8,016.0	8,069.2
% incr		-0.9%	0.9%	1.4%	1.1%	1.2%	0.7%

April 2006 Sales Update (Reduced by Future DSM)

Residential	2,142.5	2,166.0	2,212.0	2,238.5	2,250.6	2,255.3
% incr		1.1%	2.1%	1.2%	0.5%	0.2%
Commercial	5,541.0	5,618.0	5,684.0	5,766.6	5,841.6	5,905.9
% incr		1.4%	1.2%	1.5%	1.3%	1.1%
Sched F	37.8	37.6	37.6	37.6	37.6	37.6
% incr		-0.5%	0.0%	0.0%	0.0%	0.0%
Total	7,721.3	7,821.6	7,933.6	8,042.7	8,129.8	8,198.8
% incr		1.3%	1.4%	1.4%	1.1%	0.8%

August 2006 less April 2006

Residential	-47.6	-83.1	-93.4	-99.4	-91.5
Commercial	-124.0	-129.9	-118.3	-109.3	-91.5
Sched F	0.2	0.2	0.3	0.2	0.2
Total	-171.4	-212.8	-211.4	-208.5	-182.8

Note: Includes leap year impacts.

EXHIBIT 17

Hawaiian Electric Company, Inc.

RESIDENTIAL SALES
August 2006 Forecast

Avg. No. of Cust.			Avg. Use per Cust.		Recorded Sales *	
	Customers	% Chg	kWh	% Chg	GWh	% Chg
1996	236,849		7,868		1,863.4	
1997	238,269	0.6%	7,773	-1.2%	1,852.2	-0.6%
1998	239,487	0.5%	7,603	-2.2%	1,820.8	-1.7%
1999	241,167	0.7%	7,654	0.7%	1,846.0	1.4%
2000	243,511	1.0%	7,793	1.8%	1,897.7	2.8%
2001	246,226	1.1%	7,816	0.3%	1,924.4	1.4%
2002	248,765	1.0%	8,050	3.0%	2,002.7	4.1%
2003	251,248	1.0%	8,225	2.2%	2,066.5	3.2%
2004	253,670	1.0%	8,481	3.1%	2,151.3	4.1%
2005	256,269	1.0%	8,360	-1.4%	2,142.5	-0.4%
2006	258,964	1.1%	8,180	-2.2%	2,118.4	-1.1%
2007	261,302	0.9%	8,147	-0.4%	2,128.9	0.5%
2008	263,543	0.9%	8,139	-0.1%	2,145.1	0.8%
2009	265,784	0.9%	8,094	-0.6%	2,151.2	0.3%
2010	268,026	0.8%	8,073	-0.3%	2,163.8	0.6%
2011	270,267	0.8%	8,062	-0.1%	2,178.8	0.7%

* Includes future DSM, net energy metering, leap year impacts,

EXHIBIT 18
PAGE 1 OF 2

Hawaiian Electric Company, Inc.
Large Project GWh Sales, August 2006 Forecast

<u>Sector</u>	<u>In Svc</u> <u>Date</u>	<u>Billed</u> <u>2005</u>	<u>2006</u>	<u>2007</u>	<u>2008</u>	<u>2009</u>	<u>2010</u>	<u>2011</u>
Restmnt	Nov-05	0.2	1.3	2.2	2.2	2.2	2.2	2.2
Restmnt	Jul-06		0.4	0.8	0.8	0.8	0.8	0.8
Restmnt	Jul-06		0.2	0.9	0.9	0.9	0.9	0.9
Restmnt	Oct-06		0.2	0.8	1.0	1.0	1.0	1.0
Retail	Nov-02	4.3	4.3	4.7	4.7	4.7	4.7	4.7
Retail	Aug-05	15.8	15.9	17.7	17.7	17.7	17.7	17.7
Retail	Aug-05	0.7	1.1	1.1	1.1	1.1	1.1	1.1
Retail	Sep-05	0.3	1.3	1.3	1.3	1.3	1.3	1.3
Retail	Nov-05	0.2	1.0	1.1	1.1	1.1	1.1	1.1
Retail	Nov-05	0.2	1.4	1.4	1.4	1.4	1.4	1.4
Retail	Dec-05	0.2	0.8	0.8	0.8	0.8	0.8	0.8
Retail	Jan-06		3.3	3.6	3.6	3.6	3.6	3.6
Retail	Jan-07			4.5	4.5	4.5	4.5	4.5
Retail	Apr-06	0.1	0.7	1.1	1.1	1.1	1.1	1.1
Retail	Jul-06		0.4	1.3	1.3	1.3	1.3	1.3
Retail	Jul-06		0.7	1.3	1.3	1.3	1.3	1.3
Retail	Jul-06	2.5	3.7	5.1	5.1	5.1	5.1	5.1
Retail	Aug-06		0.7	1.8	1.8	1.8	1.8	1.8
Retail	Oct-06	0.6	0.8	1.3	1.3	1.3	1.3	1.3
Retail	Jan-07			6.6	6.6	6.6	6.6	6.6
Retail	Jan-08				2.8	2.8	2.8	2.8
Retail	May-08				2.9	4.4	4.4	4.4
Retail	May-08				2.5	4.4	4.4	4.4
Grocery	Jan-08				2.3	2.3	2.3	2.3
Grocery	Mar-08				2.1	2.6	2.6	2.6
Warehse	Oct-06		0.1	0.8	0.8	0.8	0.8	0.8
Warehse	Jan-07			0.7	1.3	1.3	1.3	1.3
Warehse	Apr-07			0.6	0.8	0.8	0.8	0.8
Educ		122.2	128.1	128.1	128.3	128.6	128.6	129.1
Educ	Aug-04	7.5	12.5	12.9	13.2	13.2	13.2	13.2
Educ	Sep-06	0.5	0.6	0.7	0.7	0.7	0.7	0.7
Educ	Sep-06		0.1	0.8	0.8	0.8	0.8	0.8
Educ	Apr-09					4.7	6.2	6.2
Educ	Sep-09					3.2	9.6	9.6
Educ	Sep-09					0.7	2.2	2.2
Educ	Sep-09					0.3	0.8	0.8
Educ	Jan-10						6.2	6.2
Health	Jul-07			2.0	5.9	9.9	11.8	11.8
Health	Jul-09					2.3	4.5	4.5
Health	Jul-09					1.8	3.5	3.5
Health	Jul-09					0.9	1.7	1.7
Hotel	Apr-05	(10.6)	(10.2)	(1.3)	2.2	7.4	8.2	8.2
Hotel	Jul-07			2.9	5.8	8.7	11.6	11.6
Hotel	Jul-08				7.8	15.5	15.5	15.5
Hotel	Jul-08				6.9	13.8	13.8	13.8
Hotel	Jul-08				4.0	8.0	8.0	8.0
Hotel	Jul-09					7.8	15.5	15.5

EXHIBIT 18
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Hawaiian Electric Company, Inc.
Large Project GWh Sales, August 2006 Forecast

Sector	In Svc Date	Billed 2005	2006	2007	2008	2009	2010	2011
Hotel	Jul-10						7.8	15.5
Housing	Dec-05	0.5	1.3	1.3	1.3	1.3	1.3	1.3
Housing	Dec-05	0.2	0.5	0.5	0.5	0.5	0.5	0.5
Housing	Jan-06	0.6	5.6	5.6	5.6	5.6	5.6	5.6
Housing	Jun-06	0.8	6.8	8.5	8.5	8.5	8.5	8.5
Housing	Dec-06		0.1	0.7	0.7	0.7	0.7	0.7
Housing	Jan-07			5.9	8.8	8.8	8.8	8.8
Housing	Nov-07				2.3	3.1	3.1	3.1
Housing	Dec-07				2.4	3.2	3.2	3.2
Housing	Dec-07				0.8	0.8	0.8	0.8
Housing	Dec-07				5.8	5.8	5.8	5.8
Housing	Mar-08				2.1	4.3	4.3	4.3
Housing	Jul-08				1.4	2.8	2.8	2.8
Housing	Mar-09					4.1	5.4	5.4
Housing	Jul-09					1.0	3.1	3.1
Housing	Jul-09					1.2	2.4	2.4
Svc/Amu	Jul-08				1.5	3.0	3.0	3.0
Manufg		4.7	3.6	3.6	3.6	3.6	3.6	3.6
Manufg	Apr-06		0.4	0.7	0.7	0.7	0.7	0.7
Manufg	Aug-06		1.2	0.9	0.9	0.9	0.9	0.9
Manufg	Jul-07			(7.0)	(14.0)	(14.0)	(14.0)	(14.0)
Pump	Oct-04	2.3	6.5	8.9	16.6	23.2	23.2	23.2
Pump	Jan-09					(7.5)	(7.5)	(7.5)
Pump	Jan-09					5.6	5.6	5.6
Military		0.0	0.2	0.7	2.3	2.7	2.7	2.7
Military		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Military		0.0						
Military		0.0	0.0	5.6	8.5	16.7	27.1	31.3
Military		0.0	0.0	0.0	0.0	2.1	5.2	5.2
Military		(0.2)	9.6	23.4	40.3	72.4	82.4	83.5
Military		0.0	2.1	6.5	6.5	6.5	6.5	6.5
Military		(0.3)	2.1	3.6	6.8	4.8	6.8	4.8
Military		0.0	(0.5)	10.9	20.1	22.3	23.0	23.0
Military		0.0	0.0	0.0	0.0	1.8	1.8	1.8
Military		0.0	0.0	0.0	0.0	0.0	15.3	30.7
Military		0.1	0.6	0.8	0.8	1.1	1.4	1.4
Military			(7.5)	(30.0)	(30.0)	(30.0)	(30.0)	(30.0)
Military		2.9	2.1	4.1	1.6	(1.3)	2.4	4.4
Fd Proc	Jul-06		1.0	2.3	2.3	2.3	2.3	2.3
Total			131.2	166.9	205.7	287.2	399.8	491.8
Incremental YOY Change				35.7	38.8	81.6	112.5	92.0

Hawaiian Electric Company, Inc.

**Projected Year-Over-Year Change
for Remainder of 2006**

	<u>GWh</u>
August 2006 Sales Forecast for 2006	7,650.2
Less: Jul YTD 2006 recorded	<u>4,356.1</u>
2006 Aug - Dec forecast	3,294.1
2005 Recorded Sales	7,721.3
Less: Jul YTD 2005 recorded	<u>4,394.0</u>
2005 Aug - Dec recorded	3,327.3
Aug - Dec year-over-year change	-1.0%

* Year-over-year sales change expected for the remainder of 2006 based on the August 2006 sales forecast and year-to-date sales.

EXHIBIT 20

Hawaiian Electric Company, Inc.
Comparison of August 2006 Peak Forecast to Prior Peak Forecasts
(Gross MW)

	<u>2005</u> ¹	<u>2006</u>	<u>2007</u>	<u>2008</u>	<u>2009</u>	<u>2010</u>	<u>2011</u>
Aug 2006 Peak Forecast							
System Peak ²	1,293	1,319	1,327	1,345	1,357	1,370	1,376
% incr		2.0%	0.6%	1.4%	0.9%	1.0%	0.4%
Apr 2006 Peak Update							
System Peak ³	1,293	1,353	1,371	1,379	1,395	1,404	
% incr		4.6%	1.3%	0.6%	1.1%	0.7%	
Aug 2006 less Apr 2006 Difference							
Gross MW		-34	-44	-34	-38	-34	

	<u>2005</u> ¹	<u>2006</u>	<u>2007</u>	<u>2008</u>	<u>2009</u>	<u>2010</u>	<u>2011</u>
Aug 2006 Peak Forecast							
System Peak ²	1,293	1,319	1,327	1,345	1,357	1,370	1,376
% incr		2.0%	0.6%	1.4%	0.9%	1.0%	0.4%
May 2005 Peak Forecast							
System Peak ³		1,390	1,414	1,422	1,443	1,462	
% incr			1.7%	0.6%	1.5%	1.3%	
Aug 2006 less May 2005 Difference							
Gross MW		-71	-87	-77	-86	-92	

¹ 2005 adjusted actual = 1,273 MW plus 20 MW standby net adjustment for 2005 (26 MW total potential standby less 6 MW standby on 2005 actual peak).

² Aug 2006 forecast peaks include 26 MW and 28 MW standby adjustments in 2006 and 2008-on, respectively.

³ Apr 2006 and May 2005 include 28 MW standby.

ESTIMATED STANDBY ON HECO DAY PEAK

Maximum Priority Peak Load

Date: 9/23/04

Time: 12:30

19,814 KW

¹ 3,413 KW

Total 23,227 KW

² 2,000 KW

Total 25,227 KW

August 2006 Forecast

2006-07 Standby 25.0 MW

2008-on Standby ¹ 27.0 MW

¹ Demand in excess of base load of 2.0 MW. Beginning in 2008, this 2.0 MW is assumed to be included in standby.

² Assumes one of five 2.0 Mw units is unavailable.

Source: Remote interrogation readings, 7/99 - 12/31/05.

Note: Coincidence of cogenerator outages based on occurrences of Tesoro outages. Total kW delivered by HECO to Tesoro and Chevron during July - September for the years 1999 - 2005, and maximum coincident load during day peak hours (10:00 - 14:00).

ESTIMATED STANDBY ON HECO EVENING PEAK

Maximum Priority Peak Load

Date: 12/16/04

Time: 21:00

20,232 KW

¹ 3,547 KW

Total 23,779 KW

² 2,000 KW

Total 25,779 KW

August 2006 Forecast

2006-07 Standby 26.0 MW

2008-on Standby ¹ 28.0 MW

¹ Demand in excess of base load of 2.0 MW. Beginning in 2008, this 2.0 MW is assumed to be included in standby.

² Assumes one of five 2.0 Mw units is unavailable.

Source: Remote interrogation readings, 7/99 - 12/31/05.

Note: Coincidence of cogenerator outages based on occurrences of Tesoro outages. Total kW delivered by HECO to Tesoro and Chevron during September - December for the years 1999 - 2005, and maximum coincident load during evening peak hours (17:00 - 21:00).

EXHIBIT 22

Hawaiian Electric Company, Inc.

**RIDER I - INTERRUPTIBLE LOADS (MW)
August 2006 Forecast**

<u>Name</u>	<u>Ave Meas Demand ¹</u>		<u>mW Interruptible</u>	
	<u>AM</u>	<u>PM</u>	<u>AM</u>	<u>PM</u>
	1.5	1.8	1.3	1.6
	1.3	0.1	1.3	0.1
	1.0	0.0	1.0	0.0
	1.1	1.7	1.1	1.7
	1.1	1.2	0.6	0.7
	6.0	4.8	5.3	4.1

Note:

1. AM peak - Average Jul-Sept weekday load during the time of the daily am peak, 11 am to 2 pm.
PM peak - Average Sept-Dec weekday load during the time of the daily pm peak, 6 to 9 pm.

Hawaiian Electric Company, Inc.

2006 - 2011 EVENING PEAK, DAY PEAK, MINIMUM LOAD DEMAND,
SALES LOAD FACTOR, AND SALES FORECAST

August 2006

	GROSS MW											GWH SALES									
	Evening Peak					Day Peak					Minimum Load Demand										
	Gross Peak Demand w/o DSM	Acquired DSM Program Impact	Future DSM Program Impact	Gross Peak Demand w/ DSM	Sales Load Factor % Chg w/ DSM	Gross Peak Demand w/o DSM	Acquired DSM Program Impact	Future DSM Program Impact	Gross Peak Demand w/ DSM	Sales Load Factor % Chg w/ DSM	Gross Demand w/o DSM	Acquired DSM Program Impact	Future DSM Program Impact	Gross Demand w/ DSM	Sales Load Factor % Chg w/ DSM	Recorded Sales w/o DSM	Acquired DSM Program Impact	Future DSM Program Impact	Recorded Sales w/ DSM	Sales Load Factor % Chg w/ DSM	
Actual																					
1990	1119				2.7%	66.0%	1093				468				1.7%	6470.6				3.5%	
1991	1141				2.0%	65.4%	1101				470				0.4%	6539.0				1.1%	
1992	1173				2.8%	64.5%	1143				477				1.5%	6650.4				1.7%	
1993	1174				0.1%	64.2%	1145				473				-0.8%	6607.4				-0.6%	
1994	1193				1.6%	65.0%	1164				482				1.9%	6797.4				2.9%	
1995	1190				-0.3%	66.8%	1158				487				1.0%	6962.8				2.4%	
1996	1202	-3		1199	0.8%	67.3%	1210	-1		1209	4.6%	495	0		1.6%	7094.7	-3.8		7091.1	1.8%	
1997	1227	-7		1220	1.8%	65.9%	1220	-7		1213	0.3%	503	0		1.6%	7068.7	-28.4		7040.3	-0.7%	
1998	1187	-12		1175	-3.7%	67.4%	1173	-11		1162	-4.2%	507	0		0.8%	6989.3	-51.0		6938.3	-1.4%	
1999	1177	-16		1161	-1.2%	68.8%	1169	-15		1154	-0.7%	523	0		3.2%	7068.3	-70.4		6997.9	0.9%	
2000	1223	-20		1203	3.6%	68.2%	1210	-19		1191	3.2%	517	0		-1.1%	7303.3	-91.5		7211.8	3.1%	
2001	1257	-24		1233	2.5%	67.4%	1233	-23		1210	1.6%	542	0		4.8%	7386.3	-109.6		7276.7	0.9%	
2002	1278	-28		1250	1.4%	67.5%	1254	-27		1227	1.4%	523	0		-3.5%	7511.5	-121.1		7390.4	1.6%	
2003	1316	-32		1284	2.7%	66.9%	1287	-31		1258	2.4%	534	0		2.1%	7657.3	-135.1		7522.2	1.8%	
2004	1363	-36		1327	3.3%	66.3%	1316	-35		1281	2.0%	560	0		4.9%	7882.1	-149.3		7732.8	2.8%	
2005	1313	-40		1273	-4.1%	69.2%	1303	-40		1283	-1.4%	553	0		-1.3%	7885.9	-164.6		7721.3	-0.1%	
Forecast	Forecast evening peaks are not reduced for interruptible loads (4 MW), but do include standby loads (26 MW in 2006-07 and 28 MW in 2008-on). Forecast day peaks are not reduced for interruptible loads (5 MW), but do include standby loads (25 MW in 2006-07 and 27 MW in 2008-on). Forecast peaks and minimums include impact of 3rd party CHP.																				
2006	1363	-40	-4	1319	3.6%	66.2%	1353	-41	-3	1309	3.6%	573	0	0	573	3.6%	7839.3	-174.1	-15.0	7650.2	-0.9%
2007	1379	-39	-13	1327	0.6%	66.4%	1370	-39	-12	1319	0.8%	581	0	0	581	1.4%	7944.1	-168.9	-54.4	7720.8	0.9%
2008	1407	-39	-23	1345	1.4%	66.3%	1398	-39	-22	1337	1.4%	593	0	0	593	2.1%	8100.3	-168.7	-100.3	7831.3	1.4%
2009	1428	-39	-32	1357	0.9%	66.6%	1419	-39	-30	1350	1.0%	602	0	0	602	1.5%	8231.4	-168.7	-141.4	7821.3	1.1%
2010	1449	-39	-40	1370	1.0%	66.8%	1442	-39	-39	1364	1.0%	612	0	0	612	1.7%	8365.8	-168.7	-180.9	8016.0	1.2%
2011	1463	-39	-48	1376	0.4%	66.9%	1457	-39	-47	1371	0.5%	618	0	0	618	1.0%	8454.7	-166.1	-219.4	8069.2	0.7%

* Evening peaks are system peaks except for 1996 when day peak was the system peak.

Hawaiian Electric Company, Inc.

2006 - 2011 EVENING PEAK, DAY PEAK, MINIMUM LOAD DEMAND,
SALES LOAD FACTOR, AND SALES FORECAST

August 2006

	GROSS MW												GWH SALES			
	Evening Peak				Day Peak				Minimum Load Demand							
	Gross Peak	3rd Party	Gross Peak		Gross Peak	3rd Party	Gross Peak		Gross Demand	3rd Party	Gross Demand		Recorded Sales	3rd Party	Recorded Sales	
	w/o DSM	CHP	w/o DSM	% Chg	w/o DSM	CHP	w/o DSM	% Chg	w/o DSM	CHP	w/o DSM	% Chg	w/o DSM	CHP	w/o DSM	% Chg
	w/o CHP	Impact	w/ CHP		w/o CHP	Impact	w/ CHP		w/o CHP	Impact	w/ CHP		w/o CHP	Impact	w/ CHP	
Actual																
1990	1119		1119	2.7%	1093		1093	3.6%	468		468	1.7%	6470.6		6470.6	3.5%
1991	1141		1141	2.0%	1101		1101	0.7%	470		470	0.4%	6539.0		6539.0	1.1%
1992	1173		1173	2.8%	1143		1143	3.8%	477		477	1.5%	6650.4		6650.4	1.7%
1993	1174		1174	0.1%	1145		1145	0.2%	473		473	-0.8%	6607.4		6607.4	-0.6%
1994	1193		1193	1.6%	1164		1164	1.7%	482		482	1.9%	6797.4		6797.4	2.9%
1995	1190		1190	-0.3%	1156		1156	-0.7%	487		487	1.0%	6962.8		6962.8	2.4%
1996 *	1202		1202	1.0%	1210		1210	4.7%	495		495	1.6%	7094.7		7094.7	1.9%
1997	1227		1227	2.1%	1220		1220	0.8%	503		503	1.6%	7068.7		7068.7	-0.4%
1998	1187		1187	-3.3%	1173		1173	-3.9%	507		507	0.8%	6989.3		6989.3	-1.1%
1999	1177		1177	-0.8%	1169		1169	-0.3%	523		523	3.2%	7068.3		7068.3	1.1%
2000	1223		1223	3.9%	1210		1210	3.5%	517		517	-1.1%	7303.3		7303.3	3.3%
2001	1257		1257	2.8%	1233		1233	1.9%	542		542	4.8%	7386.3		7386.3	1.1%
2002	1278		1278	1.7%	1254		1254	1.7%	523		523	-3.5%	7511.5		7511.5	1.7%
2003	1316		1316	3.0%	1287		1287	2.6%	534		534	2.1%	7657.3		7657.3	1.9%
2004	1363		1363	3.6%	1316		1316	2.3%	560		560	4.9%	7882.1		7882.1	2.9%
2005	1313		1313	-0.2%	1303		1303	1.2%	553		553	3.6%	7885.9		7885.9	3.0%
Forecast	Forecast evening peaks are not reduced for interruptible loads (4 MW), but do include standby loads (26 MW in 2006-07 and 28 MW in 2008-on). Forecast day peaks are not reduced for interruptible loads (5 MW), but do include standby loads (25 MW in 2006-07 and 27 MW in 2008-on). Forecast peaks and minimums include impact of 3rd party CHP.															
2006	1363	0	1363	3.8%	1353	0	1353	3.8%	573	0	573	3.6%	7839.3	0.0	7839.3	-0.6%
2007	1379	0	1379	1.2%	1370	0	1370	1.3%	581	0	581	1.4%	7944.1	0.0	7944.1	1.3%
2008	1408	-1	1407	2.0%	1399	-1	1398	2.0%	593	0	593	2.1%	8103.5	-3.2	8100.3	2.0%
2009	1430	-2	1428	1.5%	1421	-2	1419	1.5%	603	-1	602	1.5%	8241.0	-9.6	8231.4	1.6%
2010	1451	-2	1449	1.5%	1444	-2	1442	1.6%	614	-2	612	1.7%	8381.6	-16.0	8365.6	1.6%
2011	1466	-3	1463	1.0%	1460	-3	1457	1.0%	620	-2	618	1.0%	8477.0	-22.3	8454.7	1.1%

* Evening peaks are system peaks except for 1996 when day peak was the system peak.

Hawaiian Electric Company, Inc.

2008 - 2011 EVENING PEAK, DAY PEAK, MINIMUM LOAD DEMAND,
SALES LOAD FACTOR, AND SALES FORECAST

August 2006

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	NET MW						GWH SALES					
	Evening Peak			Day Peak								
	Net Peak Demand w/o DSM	Acquired DSM Program Impact	Future DSM Program Impact	Net Peak Demand w/o DSM	Acquired DSM Program Impact	Future DSM Program Impact	Recorded Sales w/o DSM	Acquired DSM Program Impact	Future DSM Program Impact	Recorded Sales w/ DSM	% Chg	% Chg
Actual												
1990							6470.6				3.5%	
1991	1088			1058			6539.0				1.1%	
1992	1129			1101			6650.4				1.7%	
1993	1123			1099			6607.4				-0.6%	
1994	1140			1112			6797.4				2.9%	
1995	1158			1125			6962.8				2.4%	
1996 *	1159	-2		1167	-1		7084.7	-3.6		7091.1	1.8%	
1997	1183	-7		1177	-7		7068.7	-28.4		7040.3	-0.7%	
1998	1142	-11		1131	-10		6989.3	-51.0		6838.3	-1.4%	
1999	1135	-15		1126	-14		7068.3	-70.4		6997.9	0.9%	
2000	1183	-19		1168	-18		7303.3	-91.5		7211.8	3.1%	
2001	1214	-23		1192	-22		7386.3	-108.6		7276.7	0.9%	
2002	1231	-27		1216	-26		7511.5	-121.1		7390.4	1.8%	
2003	1272	-30		1243	-29		7657.3	-135.1		7522.2	1.8%	
2004	1315	-34		1280	-33		7882.1	-149.3		7732.8	2.8%	
2005	1268	-38		1258	-38		7885.9	-164.6		7721.3	-0.1%	
Forecast												
	Forecast evening peaks are not reduced for interruptible loads (4 MW), but do include standby loads (26 MW in 2006-07 and 28 MW in 2008-on).											
	Forecast day peaks are not reduced for interruptible loads (5 MW), but do include standby loads (25 MW in 2006-07 and 27 MW in 2008-on).											
	Forecast peaks and minimums include impact of 3rd party CHP.											
2006	1319	-38	-3	1278	-39	-3	7839.3	-174.1	-15.0	7650.2	-0.9%	
2007	1337	-37	-13	1287	-37	-11	7944.1	-168.9	-54.4	7720.8	0.8%	
2008	1353	-37	-22	1294	-37	-20	8100.3	-168.7	-100.3	7831.3	1.4%	
2009	1377	-37	-30	1310	-37	-28	8231.4	-168.7	-141.4	7921.3	1.1%	
2010	1399	-37	-38	1324	-37	-36	8365.6	-168.7	-180.9	8016.0	1.2%	
2011	1415	-37	-45	1333	-37	-44	8454.7	-168.1	-219.4	8089.2	0.7%	

* Evening peaks are system peaks except for 1996 when day peak was the system peak.

Hawaiian Electric Company, Inc.

2006 - 2011 EVENING PEAK, DAY PEAK, MINIMUM LOAD DEMAND,
SALES LOAD FACTOR, AND SALES FORECAST

August 2006

	NET MW								GWH SALES			
	Evening Peak				Day Peak							
	Net Peak w/o DSM w/o CHP	3rd Party CHP Impact	Net Peak w/o DSM w/ CHP	% Chg	Net Peak w/o DSM w/o CHP	3rd Party CHP Impact	Net Peak w/o DSM w/ CHP	% Chg	Recorded Sales w/o DSM w/o CHP	3rd Party CHP Impact	Recorded Sales w/o DSM w/ CHP	% Chg
<u>Actual</u>												
1990									6470.6		6470.6	3.5%
1991	1088		1088		1058		1058		6539.0		6539.0	1.1%
1992	1129		1129	3.8%	1101		1101	4.1%	6650.4		6650.4	1.7%
1993	1123		1123	-0.5%	1099		1099	-0.2%	6607.4		6607.4	-0.6%
1994	1140		1140	1.5%	1112		1112	1.2%	6797.4		6797.4	2.9%
1995	1158		1158	1.6%	1125		1125	1.2%	6962.8		6962.8	2.4%
1996 *	1159		1159	0.1%	1167		1167	3.7%	7094.7		7094.7	1.9%
1997	1183		1183	2.1%	1177		1177	0.9%	7068.7		7068.7	-0.4%
1998	1142		1142	-3.5%	1131		1131	-3.9%	6989.3		6989.3	-1.1%
1999	1135		1135	-0.6%	1126		1126	-0.4%	7068.3		7068.3	1.1%
2000	1183		1183	4.2%	1168		1168	3.7%	7303.3		7303.3	3.3%
2001	1214		1214	2.6%	1192		1192	2.1%	7386.3		7386.3	1.1%
2002	1231		1231	1.4%	1216		1216	2.0%	7511.5		7511.5	1.7%
2003	1272		1272	3.3%	1243		1243	2.2%	7657.3		7657.3	1.9%
2004	1315		1315	3.4%	1280		1280	3.0%	7882.1		7882.1	2.9%
2005	1268		1268	-3.6%	1258		1258	-1.7%	7885.9		7885.9	0.0%
<u>Forecast</u>	Forecast evening peaks are not reduced for interruptible loads (4 MW), but do include standby loads (26 MW in 2006-07 and 28 MW in 2008-on). Forecast day peaks are not reduced for interruptible loads (5 MW), but do include standby loads (25 MW in 2006-07 and 27 MW in 2008-on). Forecast peaks and minimums include impact of 3rd party CHP.											
2006	1319	0	1319	4.0%	1312	0	1312	4.3%	7839.3	0.0	7839.3	-0.6%
2007	1337	0	1337	1.4%	1329	0	1329	1.3%	7944.1	0.0	7944.1	1.3%
2008	1354	-1	1353	1.2%	1350	-1	1349	1.5%	8103.5	-3.2	8100.3	2.0%
2009	1379	-2	1377	1.8%	1374	-2	1372	1.7%	8241.0	-9.6	8231.4	1.6%
2010	1401	-2	1399	1.6%	1396	-2	1394	1.6%	8381.6	-16.0	8365.6	1.6%
2011	1418	-3	1415	1.1%	1413	-3	1410	1.1%	8477.0	-22.3	8454.7	1.1%

* Evening peaks are system peaks except for 1996 when day peak was the system peak.

Hawaiian Electric Company, Inc.
Honolulu Airport Weather Data
MONTHLY COOLING DEGREE DAYS

	2006	2005	2004	2003	2002	2001	2000	1999	1998	1997	1996	1995	1994	1993	1992	1991	1990	1989	1988	1987	1986	1985	1984	1983	1982	1981	1980	1979	1978	1977	1976
JAN	293	245	272	240	292	332	241	267	238	231	354	294	227	190	251	236	306	301	260	267	251	205	304	223	261	263	222	159	292	278	278
FEB	205	255	323	250	234	262	256	248	227	279	266	239	248	180	244	243	189	244	289	178	217	256	285	182	195	249	220	209	238	305	209
MAR	275	280	317	338	290	319	331	305	322	326	297	334	262	285	316	250	258	325	346	285	366	300	340	270	288	311	317	250	336	355	275
APR	299	419	371	374	360	356	318	317	309	346	453	351	337	381	327	333	354	291	373	337	384	293	366	295	318	335	340	299	361	344	311
MAY	324	514	453	439	414	415	419	383	368	355	441	428	451	387	404	404	412	425	437	337	421	364	432	335	421	385	418	412	417	396	393
JUN	458	537	496	471	481	451	470	417	407	489	494	498	486	463	495	442	456	482	482	465	457	437	438	425	442	474	442	458	418	441	402
JUL	496	570	556	545	503	515	508	452	463	521	538	572	564	491	518	508	498	521	527	537	519	521	501	461	493	463	501	500	439	498	464
AUG	509	588	558	573	539	541	517	500	506	553	560	578	606	515	540	547	543	517	537	556	561	532	527	544	514	477	504	485	489	541	498
SEP	464	491	537	518	495	522	476	480	489	537	502	555	575	491	495	501	525	512	520	544	521	491	494	525	499	477	503	489	473	505	479
OCT		430	517	504	479	467	482	421	464	492	525	554	547	465	452	474	501	431	478	516	491	464	475	508	452	419	476	504	401	507	446
NOV		371	383	420	383	375	382	361	390	350	365	464	481	345	369	443	377	358	455	418	433	310	425	461	326	355	395	378	298	417	315
DEC		270	324	336	329	357	307	289	310	288	257	442	367	314	368	353	289	252	336	342	318	264	291	318	225	284	295	326	239	320	325
Yr		4,970	5,107	5,008	4,799	4,912	4,707	4,420	4,493	4,767	5,052	5,309	5,151	4,507	4,779	4,734	4,708	4,659	5,040	4,782	4,939	4,437	4,878	4,547	4,434	4,492	4,633	4,469	4,401	4,905	4,395

	76-03	76-05	76-06
	Avg	Avg	Avg
JAN	259	259	260
FEB	237	241	239
MAR	307	306	305
APR	342	345	344
MAY	404	409	407
JUN	457	461	460
JUL	505	509	508
AUG	532	535	534
SEP	506	507	505
OCT	478	478	478
NOV	387	387	387
DEC	312	311	311
Yr	4,727	4,748	4,740

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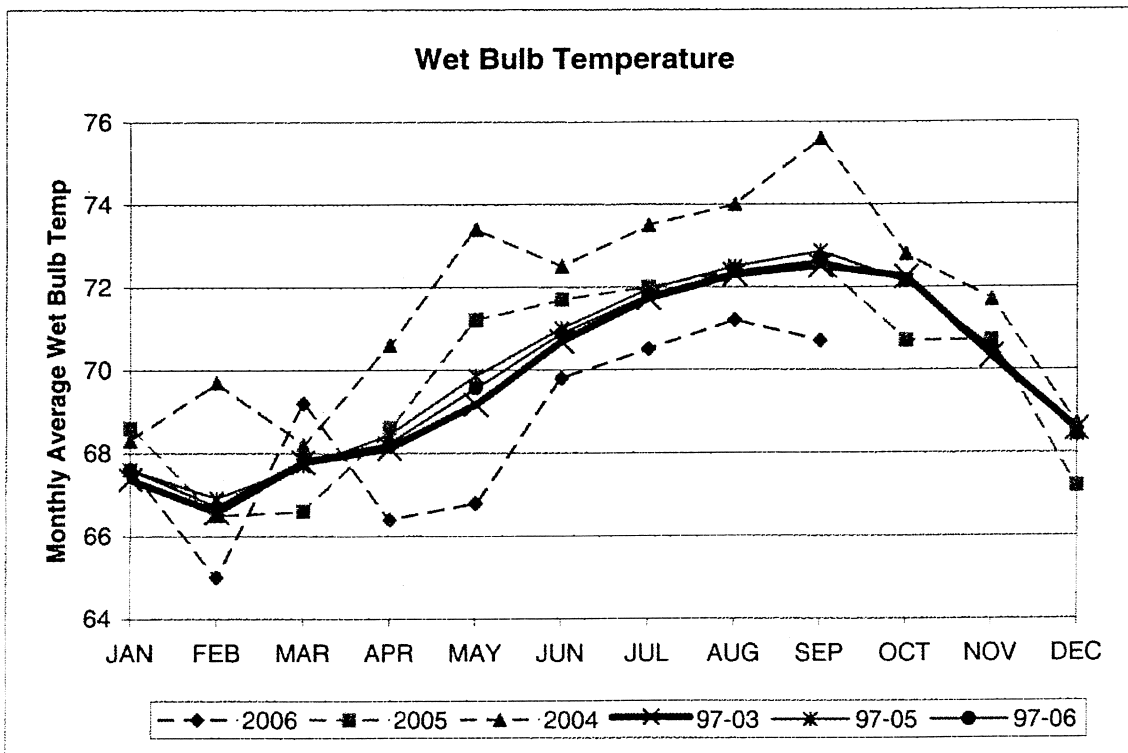
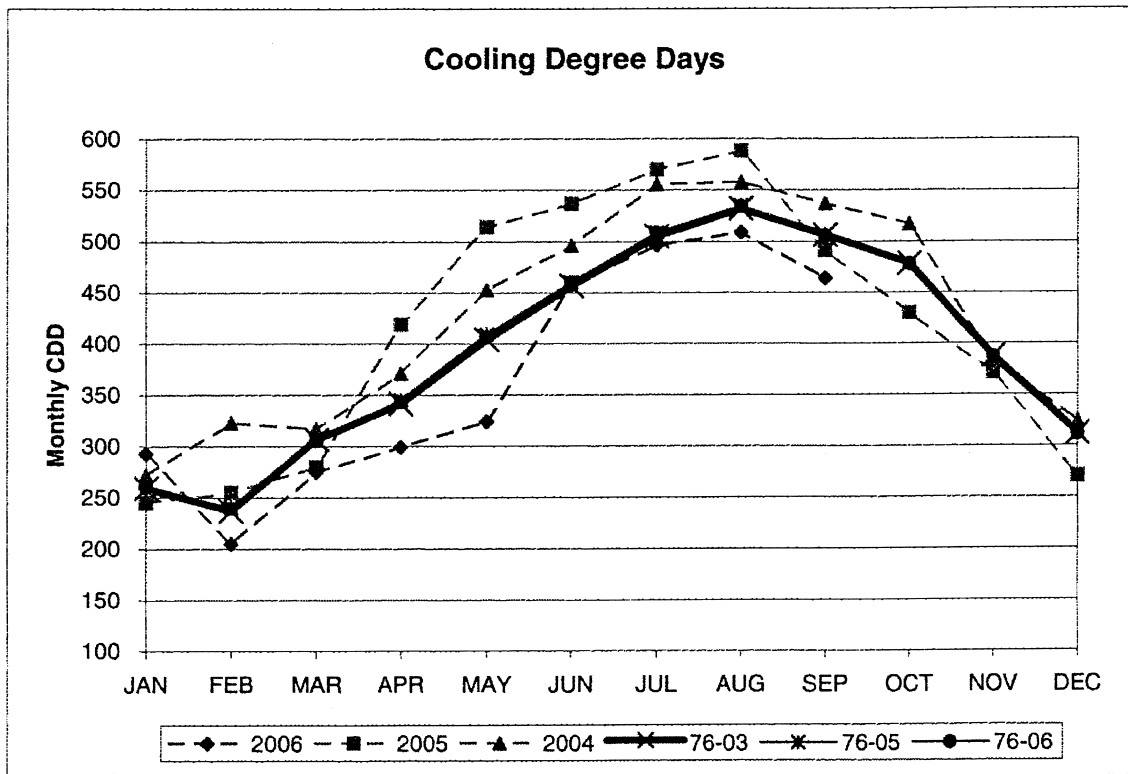
Hawaiian Electric Company, Inc.
Honolulu Airport Weather Data
MONTHLY WETBULB TEMPERATURE

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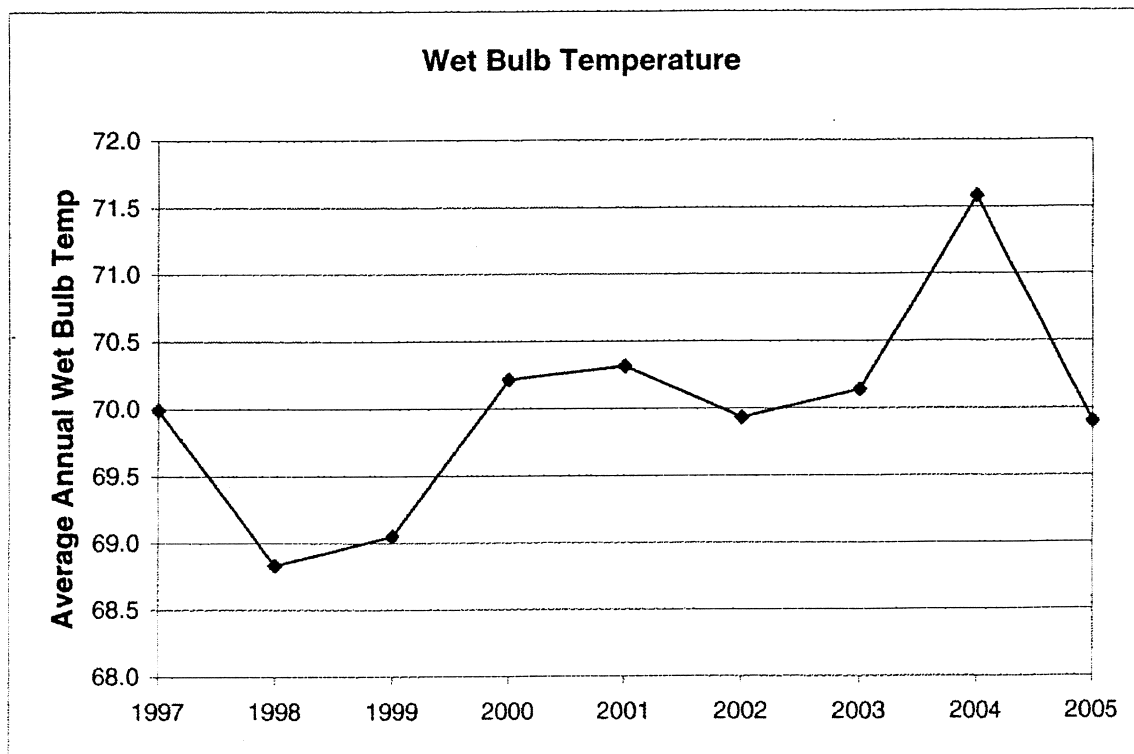
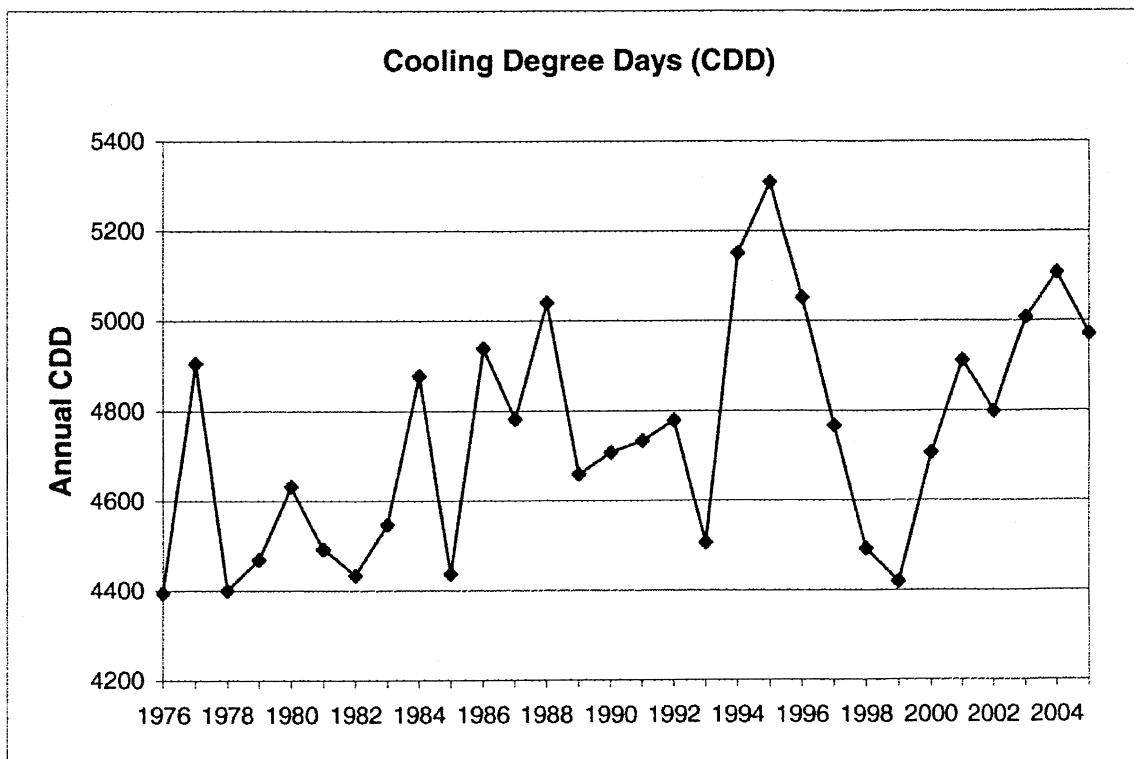
	2006	2005	2004	2003	2002	2001	2000	1999	1998	1997
JAN	67.6	68.6	68.3	66.2	69.1	69.8	66.1	67.5	65.8	67.1
FEB	65.0	66.5	69.7	65.9	64.8	68.5	68.1	66.2	65.1	67.5
MAR	69.2	66.6	68.2	69.4	66.4	68.2	68.4	66.2	67.1	68.8
APR	66.4	68.6	70.6	68.6	69.4	69.2	67.5	66.9	66.1	69.1
MAY	66.8	71.2	73.4	69.4	71.1	69.5	69.7	69.2	67.2	68.1
JUN	69.8	71.7	72.5	71.0	71.2	70.4	71.7	69.4	69.1	72.0
JUL	70.5	72.0	73.5	72.5	72.2	71.7	72.7	70.8	69.7	72.5
AUG	71.2	72.4	74.0	72.2	72.9	72.6	72.6	70.6	71.9	73.3
SEP	70.7	72.6	75.6	72.7	72.1	72.1	72.9	71.0	73.1	73.7
OCT		70.7	72.8	73.9	71.6	71.4	72.4	71.4	72.3	72.7
NOV		70.7	71.7	71.1	70.4	70.8	71.1	69.9	70.4	68.6
DEC		67.2	68.7	68.8	68.0	69.6	69.4	69.5	68.2	66.5
Avg	68.6	69.9	71.6	70.1	69.9	70.3	70.2	69.1	68.8	70.0

	97-03	97-05	97-06
	Avg	Avg	Avg
JAN	67.4	67.6	67.6
FEB	66.6	66.9	66.7
MAR	67.8	67.7	67.9
APR	68.1	68.4	68.2
MAY	69.2	69.9	69.6
JUN	70.7	71.0	70.9
JUL	71.7	72.0	71.8
AUG	72.3	72.5	72.4
SEP	72.5	72.9	72.7
OCT	72.2	72.1	72.1
NOV	70.3	70.5	70.5
DEC	68.6	68.4	68.4
Avg	69.8	70.0	69.9

FORECAST ASSUMPTIONS - WEATHER



FORECAST ASSUMPTIONS - WEATHER



**AVERAGE ELECTRICITY PRICES (CENTS / KWH)
CURRENT \$**

August 2006 Forecast							
Year	Inflation Factor	R	G/J	H/K	P	Total	Comm'l
1975	56.3	4.329	5.228	4.328	2.948	3.740	3.488
1976	59.1	4.386	5.206	4.327	2.995	3.781	3.524
1977	62.1	4.810	5.642	4.707	3.397	4.191	3.937
1978	66.9	5.485	6.280	5.334	3.961	4.801	4.530
1979	74.4	5.813	6.590	5.654	4.279	5.121	4.850
1980	83.0	7.126	8.007	7.084	5.662	6.488	6.246
1981	91.7	11.364	12.121	11.277	9.727	10.610	10.328
1982	97.2	12.095	12.455	11.812	10.126	11.083	10.717
1983	100.5	10.633	10.967	10.286	8.618	9.590	9.216
1984	103.5	11.048	11.213	10.479	8.889	9.904	9.502
1985	106.9	10.450	10.609	9.887	8.269	9.307	8.898
1986	109.4	8.435	8.278	7.706	6.198	7.231	6.812
1987	114.9	8.555	8.492	8.035	6.383	7.435	7.037
1988	121.8	8.014	7.866	7.339	5.798	6.852	6.445
1989	128.8	8.277	8.175	7.725	6.084	7.151	6.754
1990	138.2	9.136	9.051	8.564	6.933	8.002	7.610
1991	148.0	9.423	9.219	8.709	7.148	8.241	7.828
1992	155.2	9.823	9.353	9.103	7.166	8.412	7.913
1993	160.1	11.439	10.605	10.661	8.391	9.770	9.174
1994	164.6	11.320	10.356	10.485	8.118	9.580	8.955
1995	168.2	12.248	10.823	11.335	8.549	10.200	9.478
1996	170.8	12.914	11.422	11.709	9.087	10.781	10.023
1997	172.0	13.313	11.547	12.097	9.311	11.071	10.226
1998	171.5	12.570	10.733	11.363	8.524	10.255	9.432
1999	173.3	12.716	10.939	11.472	8.602	10.416	9.591
2000	176.3	14.416	12.735	13.001	10.309	12.151	11.342
2001	178.4	14.392	12.735	12.723	10.380	12.187	11.396
2002	180.3	13.759	12.216	11.996	9.823	11.647	10.863
2003	184.5	14.877	13.292	12.968	10.927	12.762	11.961
2004	190.6	15.571	13.965	13.596	11.613	13.457	12.643
2005	197.5	17.577	15.938	15.329	13.592	15.445	14.627
Forecast							
* 2006	205.1	20.965	18.935	18.261	16.164	18.382	17.390
2007	211.5	21.535	19.450	18.757	16.604	18.881	17.862
2008	218.0	22.113	19.972	19.261	17.050	19.388	18.342
2009	224.3	24.294	21.942	21.161	18.732	21.301	20.151
2010	230.6	26.137	23.607	22.767	20.153	22.917	21.680
2011	236.9	27.130	24.504	23.632	20.918	23.787	22.503

* Adjustments made for interim and final D&O

**AVERAGE ELECTRICITY PRICES
ANNUAL PERCENT CHANGE**

August 2006 Forecast							
Year	Inflation Factor	R	G/J	H/K	P	Total	Comm'l
1975							
1976	5.0	1.3	-0.4	0.0	1.6	1.1	1.0
1977	5.1	9.7	8.4	8.8	13.4	10.8	11.7
1978	7.7	14.0	11.3	13.3	16.6	14.6	15.1
1979	11.2	6.0	4.9	6.0	8.0	6.7	7.1
1980	11.6	22.6	21.5	25.3	32.3	26.7	28.8
1981	10.5	59.5	51.4	59.2	71.8	63.5	65.4
1982	6.0	6.4	2.8	4.7	4.1	4.5	3.8
1983	3.4	-12.1	-11.9	-12.9	-14.9	-13.5	-14.0
1984	3.0	3.9	2.2	1.9	3.1	3.3	3.1
1985	3.3	-5.4	-5.4	-5.6	-7.0	-6.0	-6.4
1986	2.3	-19.3	-22.0	-22.1	-25.0	-22.3	-23.4
1987	5.0	1.4	2.6	4.3	3.0	2.8	3.3
1988	6.0	-6.3	-7.4	-8.7	-9.2	-7.8	-8.4
1989	5.7	3.3	3.9	5.3	4.9	4.4	4.8
1990	7.3	10.4	10.7	10.9	14.0	11.9	12.7
1991	7.1	3.1	1.9	1.7	3.1	3.0	2.9
1992	4.9	4.2	1.5	4.5	0.3	2.1	1.1
1993	3.2	16.5	13.4	17.1	17.1	16.1	15.9
1994	2.8	-1.0	-2.3	-1.7	-3.3	-1.9	-2.4
1995	2.2	8.2	4.5	8.1	5.3	6.5	5.8
1996	1.5	5.4	5.5	3.3	6.3	5.7	5.8
1997	0.7	3.1	1.1	3.3	2.5	2.7	2.0
1998	-0.3	-5.6	-7.0	-6.1	-8.5	-7.4	-7.8
1999	1.0	1.2	1.9	1.0	0.9	1.6	1.7
2000	1.7	13.4	16.4	13.3	19.8	16.7	18.3
2001	1.2	-0.2	0.0	-2.1	0.7	0.3	0.5
2002	1.1	-4.4	-4.1	-5.7	-5.4	-4.4	-4.7
2003	2.3	8.1	8.8	8.1	11.2	9.6	10.1
2004	3.3	4.7	5.1	4.8	6.3	5.4	5.7
2005	3.6	12.9	14.1	12.7	17.0	14.8	15.7
Forecast							
* 2006	3.8	19.3	18.8	19.1	18.9	19.0	18.9
2007	3.1	2.7	2.7	2.7	2.7	2.7	2.7
2008	3.1	2.7	2.7	2.7	2.7	2.7	2.7
2009	2.9	9.9	9.9	9.9	9.9	9.9	9.9
2010	2.8	7.6	7.6	7.6	7.6	7.6	7.6
2011	2.7	3.8	3.8	3.8	3.8	3.8	3.8

* Adjustments made for interim and final D&O

**AVERAGE ELECTRICITY PRICES (CENTS / KWH)
ADJUSTED FOR INFLATION (1992 \$)**

August 2006 Forecast							
Year	Inflation Factor	R	G/J	H/K	P	Total	Comm'l
1975	56.3	11.934	14.412	11.931	8.127	10.310	9.615
1976	59.1	11.518	13.671	11.363	7.865	9.929	9.254
1977	62.1	12.021	14.100	11.764	8.490	10.474	9.839
1978	66.9	12.725	14.569	12.374	9.189	11.138	10.509
1979	74.4	12.126	13.747	11.794	8.926	10.683	10.117
1980	83.0	13.325	14.972	13.246	10.587	12.132	11.679
1981	91.7	19.233	20.514	19.086	16.463	17.957	17.480
1982	97.2	19.312	19.887	18.860	16.168	17.696	17.112
1983	100.5	16.420	16.936	15.884	13.309	14.810	14.232
1984	103.5	16.567	16.814	15.713	13.329	14.851	14.248
1985	106.9	15.172	15.402	14.354	12.005	13.512	12.918
1986	109.4	11.966	11.744	10.932	8.793	10.258	9.664
1987	114.9	11.556	11.470	10.853	8.622	10.043	9.505
1988	121.8	10.212	10.023	9.352	7.388	8.731	8.212
1989	128.8	9.974	9.851	9.308	7.331	8.617	8.138
1990	138.2	10.260	10.164	9.617	7.786	8.986	8.546
1991	148.0	9.881	9.667	9.133	7.496	8.642	8.209
1992	155.2	9.823	9.353	9.103	7.166	8.412	7.913
1993	160.1	11.089	10.280	10.335	8.134	9.471	8.893
1994	164.6	10.674	9.765	9.886	7.654	9.033	8.444
1995	168.2	11.301	9.987	10.459	7.888	9.412	8.745
1996	170.8	11.735	10.379	10.640	8.257	9.796	9.108
1997	172.0	12.013	10.419	10.915	8.402	9.990	9.227
1998	171.5	11.375	9.713	10.283	7.714	9.280	8.536
1999	173.3	11.388	9.796	10.274	7.704	9.328	8.589
2000	176.3	12.691	11.211	11.445	9.075	10.697	9.985
2001	178.4	12.520	11.079	11.068	9.030	10.602	9.914
2002	180.3	11.844	10.515	10.326	8.456	10.026	9.351
2003	184.5	12.514	11.181	10.909	9.192	10.735	10.062
2004	190.6	12.679	11.371	11.071	9.456	10.958	10.295
2005	197.5	13.812	12.524	12.046	10.681	12.137	11.494
Forecast							
* 2006	205.1	15.864	14.328	13.818	12.232	13.909	13.159
2007	211.5	15.803	14.273	13.764	12.184	13.855	13.107
2008	218.0	15.743	14.219	13.712	12.138	13.803	13.058
2009	224.3	16.810	15.182	14.642	12.961	14.739	13.943
2010	230.6	17.591	15.888	15.323	13.564	15.424	14.591
2011	236.9	17.774	16.053	15.482	13.704	15.584	14.742

* Adjustments made for interim and final D&O

Hawaiian Electric Co., Inc.

RESIDENTIAL USE MODEL VARIABLES

Dependent variable	Residential recorded use per customer adjusted for installed DSM
RES_RCUSE_ADJ(-X)	Residential recorded use, lag X months
RES_RPRC_RC1(-3)	Residential recorded \$/kWh, lag 3 months
CDD_7603_AVG	Cooling Degree Days, 1976-2003 monthly average
WETBULB_9703_AVG	Wet Bulb Temperature, 1997-2003 monthly average
MO_YR_TIME	Time trend
M_1	Dummy variable, January
M_10	Dummy variable, October

Hawaiian Electric Co., Inc.

RESIDENTIAL USE PER CUSTOMER FORECAST MODEL

Dependent Variable: LOG(RES_RCUSE_ADJ)

Method: Least Squares

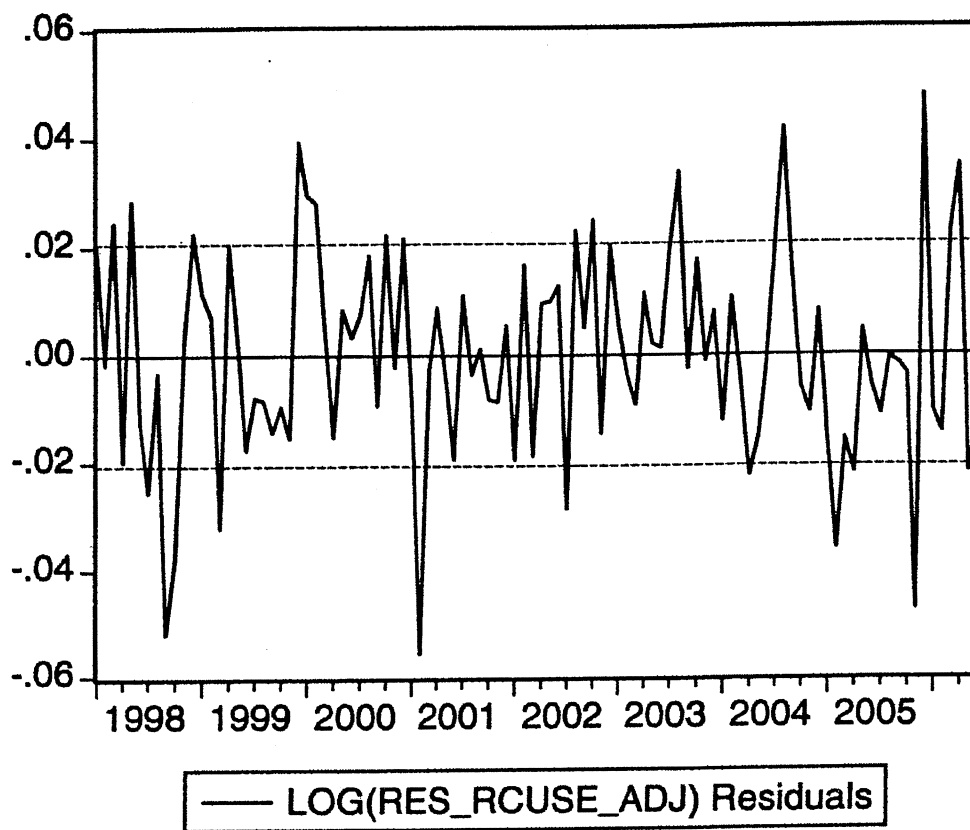
Date: 08/17/06 Time: 15:54

Sample (adjusted): 1998M01 2006M06

Included observations: 102 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.162490	0.631152	-0.257450	0.7974
LOG(RES_RCUSE_ADJ(-1))	-0.158685	0.046353	-3.423394	0.0009
LOG(RES_RCUSE_ADJ(-2))	0.144486	0.050706	2.849498	0.0054
LOG(RES_RCUSE_ADJ(-3))	0.100763	0.046074	2.186992	0.0313
LOG(RES_RCUSE_ADJ(-12))	0.512605	0.068392	7.495060	0.0000
LOG(RES_RPRC_RC1(-3))	-0.151619	0.037532	-4.039784	0.0001
LOG(CDD_7603_AVG)	0.050903	0.026446	1.924807	0.0574
LOG(WETBULB_9703_AVG)	0.452762	0.164774	2.747781	0.0072
MO_YR_TIME	0.000736	0.000143	5.157831	0.0000
M_1	0.054745	0.011412	4.797283	0.0000
M_10	-0.012196	0.008659	-1.408570	0.1624
R-squared	0.910638	Mean dependent var	6.510924	
Adjusted R-squared	0.900818	S.D. dependent var	0.065439	
S.E. of regression	0.020609	Akaike info criterion	-4.824633	
Sum squared resid	0.038649	Schwarz criterion	-4.541548	
Log likelihood	257.056300	F-statistic	92.732550	
Durbin-Watson stat	1.925698	Prob(F-statistic)	0.000000	

EViews: res_tseq_rprc3_817



Correlogram of Residuals

Date: 08/18/06 Time: 08:53 Sample: 1998M01 2006M06 Included observations: 102						
Autocorrelation	Partial Correlation	AC	PAC	Q-Stat	Prob	
		1	0.030	0.030	0.0931	0.760
		2	0.024	0.023	0.1525	0.927
		3	-0.034	-0.035	0.2732	0.965
		4	0.034	0.036	0.4016	0.982
		5	-0.136	-0.137	2.4354	0.786
		6	-0.095	-0.091	3.4281	0.754
		7	-0.052	-0.040	3.7307	0.810
		8	0.017	0.013	3.7628	0.878
		9	-0.009	-0.004	3.7717	0.926
		10	0.089	0.077	4.6881	0.911
		11	0.068	0.046	5.2316	0.919
		12	0.042	0.015	5.4389	0.942
		13	0.015	0.013	5.4643	0.964
		14	-0.060	-0.068	5.8933	0.969
		15	-0.139	-0.126	8.2648	0.913
		16	-0.037	-0.005	8.4353	0.935
		17	-0.102	-0.082	9.7360	0.914
		18	-0.062	-0.053	10.224	0.924
		19	-0.027	-0.023	10.321	0.945
		20	-0.003	-0.054	10.321	0.962
		21	-0.040	-0.082	10.535	0.971
		22	-0.031	-0.074	10.664	0.979
		23	-0.060	-0.104	11.152	0.982
		24	0.078	0.057	11.970	0.980
		25	-0.124	-0.124	14.101	0.960
		26	-0.016	-0.026	14.137	0.971
		27	-0.050	-0.050	14.495	0.976
		28	0.091	0.063	15.691	0.970
		29	0.071	0.080	16.431	0.970
		30	-0.118	-0.174	18.470	0.950
		31	0.083	0.079	19.492	0.946
		32	0.097	0.056	20.912	0.934
		33	-0.042	-0.063	21.181	0.944
		34	0.014	0.046	21.210	0.957
		35	-0.037	-0.084	21.427	0.965
		36	0.098	0.090	22.961	0.955

Breusch-Godfrey Serial Correlation LM Test:				
F-statistic	0.375244	Prob. F(12,79)	0.968624	
Obs*R-squared	5.500392	Prob. Chi-Square(12)	0.939148	
Test Equation:				
Dependent Variable: RESID				
Method: Least Squares				
Date: 08/18/06 Time: 08:53				
Sample: 1998M01 2006M06				
Included observations: 102				
Presample missing value lagged residuals set to zero.				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.117246	0.742862	0.157830	0.8750
LOG(RES_RCUSE_ADJ(-1))	-0.031099	0.061704	-0.504005	0.6157
LOG(RES_RCUSE_ADJ(-2))	0.010915	0.060166	0.181420	0.8565
LOG(RES_RCUSE_ADJ(-3))	-0.008839	0.063589	-0.138995	0.8898
LOG(RES_RCUSE_ADJ(-12))	-0.031633	0.089319	-0.354162	0.7242
LOG(RES_RPRC_RC1(-3))	0.007494	0.040527	0.184916	0.8538
LOG(CDD_7603_AVG)	-0.001758	0.030215	-0.058184	0.9537
LOG(WETBULB_9703_AVG)	0.067813	0.186097	0.364398	0.7165
MO_YR_TIME	4.73E-05	0.000156	0.303020	0.7627
M_1	0.006384	0.013572	0.470375	0.6394
M_10	0.000247	0.009921	0.024913	0.9802
RESID(-1)	0.026583	0.134886	0.197076	0.8443
RESID(-2)	0.010908	0.133570	0.081664	0.9351
RESID(-3)	-0.040620	0.142374	-0.285306	0.7762
RESID(-4)	0.083486	0.122425	0.681937	0.4973
RESID(-5)	-0.156749	0.126469	-1.239428	0.2189
RESID(-6)	-0.114623	0.127312	-0.900331	0.3707
RESID(-7)	-0.036893	0.126995	-0.290508	0.7722
RESID(-8)	0.023272	0.132742	0.175314	0.8613
RESID(-9)	-0.041500	0.132685	-0.312768	0.7553
RESID(-10)	0.087599	0.134912	0.649307	0.5180
RESID(-11)	0.072093	0.131768	0.547115	0.5858
RESID(-12)	0.023463	0.148363	0.158148	0.8747
R-squared	0.053925	Mean dependent var	8.83E-16	
Adjusted R-squared	-0.209538	S.D. dependent var	0.019562	
S.E. of regression	0.021514	Akaike info criterion	-4.644773	
Sum squared resid	0.036565	Schwarz criterion	-4.052867	
Log likelihood	259.8834	F-statistic	0.204679	
Durbin-Watson stat	1.991906	Prob(F-statistic)	0.999947	

Hawaiian Electric Co., Inc.

RESIDENTIAL USE MODEL VARIABLES

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Date	Res_Cust	Res_recd	Res_recd_adj	Res_rcuse_adj	res_rprc_rc1	CDD	Wet	Bulb	m_1	m_10	mo_yr_time
Jan-97	237763	161245746	161801882	680.517	\$ 0.12219	231	67.1	1	0	0	253
Feb-97	237767	137997201	138566103	582.781	\$ 0.12485	279	67.5	0	0	0	254
Mar-97	237774	151676994	152263713	640.372	\$ 0.12405	326	68.8	0	0	0	255
Apr-97	238846	150194760	150801571	631.376	\$ 0.12267	346	69.1	0	0	0	256
May-97	238407	148776502	149400619	626.662	\$ 0.12153	355	68.1	0	0	0	257
Jun-97	237779	153252758	153899747	647.239	\$ 0.11889	489	72.0	0	0	0	258
Jul-97	238085	159184791	159860839	671.444	\$ 0.11665	521	72.5	0	0	0	259
Aug-97	238226	162090514	162797768	683.375	\$ 0.11863	553	73.3	0	0	0	260
Sep-97	238648	163775088	164520789	689.387	\$ 0.11674	537	73.7	0	0	0	261
Oct-97	238676	160195025	160978986	674.467	\$ 0.11808	492	72.7	0	1	0	262
Nov-97	238432	147718517	148538186	622.979	\$ 0.11813	350	68.6	0	0	0	263
Dec-97	238825	156067600	156944030	657.151	\$ 0.12515	288	66.5	0	0	0	264
Jan-98	239301	159141474	160042387	668.791	\$ 0.11870	238	65.8	1	0	0	265
Feb-98	239017	134532325	135456774	566.724	\$ 0.11878	227	65.1	0	0	0	266
Mar-98	239565	154007827	154953831	646.813	\$ 0.11802	322	67.1	0	0	0	267
Apr-98	239483	139933078	140899768	588.350	\$ 0.11341	309	66.1	0	0	0	268
May-98	239219	151310134	152297762	636.646	\$ 0.11269	368	67.2	0	0	0	269
Jun-98	239094	148608567	149612843	625.749	\$ 0.11219	407	69.1	0	0	0	270
Jul-98	239287	152809991	153840441	642.912	\$ 0.11166	463	69.7	0	0	0	271
Aug-98	239655	161344637	162403458	677.655	\$ 0.11175	506	71.9	0	0	0	272
Sep-98	239858	154586364	155669970	649.009	\$ 0.11098	489	73.1	0	0	0	273
Oct-98	239872	154863932	155977300	650.252	\$ 0.11103	464	72.3	0	1	0	274
Nov-98	239547	153132916	154267492	643.997	\$ 0.11020	390	70.4	0	0	0	275
Dec-98	239945	156517281	157689734	657.191	\$ 0.11458	310	68.2	0	0	0	276
Jan-99	240152	162531045	163722333	681.745	\$ 0.10905	267	67.5	1	0	0	277
Feb-99	239708	138258256	139468279	581.826	\$ 0.10456	248	66.2	0	0	0	278
Mar-99	240986	148603167	149835857	621.762	\$ 0.10798	305	66.2	0	0	0	279
Apr-99	240773	146853547	148109812	615.143	\$ 0.10933	317	66.9	0	0	0	280
May-99	240223	154262386	155540984	647.486	\$ 0.11203	383	69.2	0	0	0	281
Jun-99	241320	150032928	151336577	627.120	\$ 0.11418	417	69.4	0	0	0	282
Jul-99	241158	157186058	158512836	657.299	\$ 0.11466	452	70.8	0	0	0	283
Aug-99	241128	160396080	161745822	670.788	\$ 0.11548	500	70.6	0	0	0	284
Sep-99	242111	156009620	157378697	650.027	\$ 0.11734	460	71.0	0	0	0	285
Oct-99	241729	156422181	157815141	652.860	\$ 0.11854	421	71.4	0	1	0	286
Nov-99	242143	153598105	155019574	640.198	\$ 0.12144	361	69.9	0	0	0	287
Dec-99	242579	161819621	163281613	673.107	\$ 0.12292	289	69.5	0	0	0	288
Jan-00	242071	164855885	166336561	687.140	\$ 0.12071	241	66.1	1	0	0	289
Feb-00	242626	146086156	147588474	608.296	\$ 0.12219	256	68.1	0	0	0	290
Mar-00	243108	154213429	155767469	640.734	\$ 0.12691	331	68.4	0	0	0	291
Apr-00	242569	145732974	147308363	607.284	\$ 0.12668	318	67.5	0	0	0	292
May-00	243134	158535799	160127863	658.599	\$ 0.12535	419	69.7	0	0	0	293
Jun-00	243131	154840095	156449941	643.480	\$ 0.12686	470	71.7	0	0	0	294
Jul-00	243082	162704311	164330262	676.028	\$ 0.12787	508	72.7	0	0	0	295
Aug-00	244083	166893925	168537693	690.493	\$ 0.12976	517	72.6	0	0	0	296
Sep-00	243918	159202570	160864763	659.503	\$ 0.12876	476	72.9	0	0	0	297
Oct-00	244763	165301860	166980635	682.214	\$ 0.12867	482	72.4	0	1	0	298
Nov-00	244626	156465667	158163173	646.551	\$ 0.13211	382	71.1	0	0	0	299
Dec-00	245027	162858129	164585968	671.705	\$ 0.13297	307	69.4	0	0	0	300
Jan-01	245249	168199072	169937548	692.918	\$ 0.12773	332	69.8	1	0	0	301
Feb-01	245336	138581466	140331587	571.998	\$ 0.12714	262	68.5	0	0	0	302
Mar-01	245589	157608387	159371688	648.937	\$ 0.12447	319	68.2	0	0	0	303
Apr-01	245509	151041078	152819017	622.458	\$ 0.12292	356	69.2	0	0	0	304
May-01	245924	158459666	160250928	651.628	\$ 0.12481	415	69.5	0	0	0	305
Jun-01	245888	156164712	157972085	642.455	\$ 0.12472	451	70.4	0	0	0	306
Jul-01	246014	169050492	170872772	694.565	\$ 0.12687	515	71.7	0	0	0	307
Aug-01	246497	168178830	170019487	689.743	\$ 0.12424	541	72.6	0	0	0	308
Sep-01	246523	166165058	168023775	681.574	\$ 0.12646	522	72.1	0	0	0	309
Oct-01	247246	165373661	167254141	676.469	\$ 0.12509	467	71.4	0	1	0	310
Nov-01	247251	160728011	162630822	657.756	\$ 0.12063	375	70.8	0	0	0	311
Dec-01	247672	164892692	166818762	673.547	\$ 0.11327	357	69.6	0	0	0	312
Jan-02	248060	169557921	171500022	691.365	\$ 0.11268	292	69.1	1	0	0	313
Feb-02	247722	144766301	146725103	592.297	\$ 0.11229	234	64.8	0	0	0	314
Mar-02	248160	159218459	161191553	649.547	\$ 0.11144	290	66.4	0	0	0	315
Apr-02	248466	160233968	162223035	652.898	\$ 0.11470	360	69.4	0	0	0	316
May-02	248618	166975644	168977004	679.665	\$ 0.11741	414	71.1	0	0	0	317
Jun-02	248129	168206655	170223495	686.028	\$ 0.11984	481	71.2	0	0	0	318
Jul-02	248834	170105775	172140927	691.790	\$ 0.12078	503	72.2	0	0	0	319
Aug-02	248628	180052348	182110426	732.461	\$ 0.12153	539	72.9	0	0	0	320
Sep-02	249384	172985192	175057577	701.960	\$ 0.12206	495	72.1	0	0	0	321

Hawaiian Electric Co., Inc.

RESIDENTIAL USE MODEL VARIABLES

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Date	Res_Cust	Res_rec'd	Res_rec'd_adj	Res_rcuse_adj	res_rprc_rc1	CDD	Wet_Bulb	m_1	m_10	mo_yr_time
Oct-02	249565	175608795	177699564	712.037	\$ 0.12431	479	71.6	0	1	322
Nov-02	249721	164755154	166864071	668.202	\$ 0.12585	383	70.4	0	0	323
Dec-02	249896	170189235	172321974	689.575	\$ 0.12666	329	68.0	0	0	324
Jan-03	250384	172348798	174505518	696.952	\$ 0.12412	240	66.2	1	0	325
Feb-03	250128	148135121	150309447	600.930	\$ 0.12690	250	65.9	0	0	326
Mar-03	250661	165735640	167926598	669.935	\$ 0.12879	338	69.4	0	0	327
Apr-03	250688	163954656	166168177	662.849	\$ 0.13008	374	68.6	0	0	328
May-03	250787	168122701	170359351	679.299	\$ 0.13067	439	69.4	0	0	329
Jun-03	250466	171657756	173919343	694.383	\$ 0.12567	471	71.0	0	0	330
Jul-03	251412	179035507	181316060	721.191	\$ 0.12408	545	72.5	0	0	331
Aug-03	250927	186728189	189029732	753.326	\$ 0.12363	573	72.2	0	0	332
Sep-03	252167	177890447	180210987	714.649	\$ 0.12265	518	72.7	0	0	333
Oct-03	252096	185606047	187959150	745.586	\$ 0.12264	504	73.9	0	1	334
Nov-03	252230	172174540	174544241	692.004	\$ 0.12132	420	71.1	0	0	335
Dec-03	253033	175133060	177520429	701.570	\$ 0.12353	336	68.8	0	0	336
Jan-04	253130	178384194	180784135	714.195	\$ 0.12171	272	68.3	1	0	337
Feb-04	252587	161501186	163913547	648.939	\$ 0.12348	323	69.7	0	0	338
Mar-04	253502	169972944	172402768	680.084	\$ 0.12396	317	68.2	0	0	339
Apr-04	253152	166966002	169407904	669.194	\$ 0.12374	371	70.6	0	0	340
May-04	253130	174811446	177267639	700.303	\$ 0.12598	453	73.4	0	0	341
Jun-04	253328	178551997	181035446	714.629	\$ 0.12440	496	72.5	0	0	342
Jul-04	253333	188781364	191284900	755.073	\$ 0.12401	556	73.5	0	0	343
Aug-04	253883	197826498	200348496	789.137	\$ 0.12569	558	74.0	0	0	344
Sep-04	254959	190684594	193224482	757.865	\$ 0.12912	537	75.6	0	0	345
Oct-04	253878	187786033	190347728	749.761	\$ 0.13291	517	72.8	0	1	346
Nov-04	254365	178100048	180682459	710.328	\$ 0.13769	383	71.7	0	0	347
Dec-04	254797	177962277	180571022	708.686	\$ 0.13965	324	68.7	0	0	348
Jan-05	255270	180689474	183311847	718.110	\$ 0.12571	245	68.6	1	0	349
Feb-05	255086	155194921	157832069	618.741	\$ 0.12804	255	66.5	0	0	350
Mar-05	255502	167526508	170179514	666.059	\$ 0.12698	280	66.6	0	0	351
Apr-05	255559	168257875	170923702	668.823	\$ 0.13222	419	68.6	0	0	352
May-05	255566	180645083	183328341	717.342	\$ 0.13756	514	71.2	0	0	353
Jun-05	256189	181895518	184595568	720.544	\$ 0.14084	537	71.7	0	0	354
Jul-05	256360	188023777	190745209	744.052	\$ 0.14645	570	72.0	0	0	355
Aug-05	256883	195107511	197853989	770.211	\$ 0.14700	588	72.4	0	0	356
Sep-05	256706	188548066	191315801	745.272	\$ 0.15143	491	72.6	0	0	357
Oct-05	256962	182998307	185789841	723.025	\$ 0.16022	430	70.7	0	1	358
Nov-05	257345	171894763	174703145	678.867	\$ 0.16191	371	70.7	0	0	359
Dec-05	257804	181752384	184595943	716.032	\$ 0.15965	270	67.2	0	0	360
Jan-06	258576	178941964	181812113	703.128	\$ 0.14934	293	67.6	1	0	361
Feb-06	257990	150504445	153398711	594.592	\$ 0.15209	205	65.0	0	0	362
Mar-06	258754	175927557	178842721	691.169	\$ 0.14834	275	69.2	0	0	363
Apr-06	258533	168873157	171803900	664.534	\$ 0.15366	299	66.4	0	0	364
May-06	258801	168187218	171128822	661.237	\$ 0.15203	324	66.8	0	0	365
Jun-06	258575	179240101	182184731	704.572	\$ 0.15792	458	69.8	0	0	366
Jul-06	258862				\$ 0.15864	505	71.7	0	0	367
Aug-06	259142				\$ 0.15864	532	72.3	0	0	368
Sep-06	259753				\$ 0.15864	506	72.5	0	0	369
Oct-06	259878				\$ 0.15864	478	72.2	0	1	370
Nov-06	260011				\$ 0.15864	387	70.3	0	0	371
Dec-06	260477				\$ 0.15864	312	68.6	0	0	372
Jan-07	260468				\$ 0.15803	259	67.4	1	0	373
Feb-07	260365				\$ 0.15803	237	66.6	0	0	374
Mar-07	260917				\$ 0.15803	307	67.8	0	0	375
Apr-07	260782				\$ 0.15803	342	68.1	0	0	376
May-07	261036				\$ 0.15803	404	69.2	0	0	377
Jun-07	260898				\$ 0.15803	457	70.7	0	0	378
Jul-07	261262				\$ 0.15803	505	71.7	0	0	379
Aug-07	261545				\$ 0.15803	532	72.3	0	0	380
Sep-07	262163				\$ 0.15803	506	72.5	0	0	381
Oct-07	262288				\$ 0.15803	478	72.2	0	1	382
Nov-07	262423				\$ 0.15803	387	70.3	0	0	383
Dec-07	262893				\$ 0.15803	312	68.6	0	0	384

HAWAIIAN ELECTRIC COMPANY, INC.
RESIDENTIAL USE PER CUSTOMER MONTHLY ECONOMETRIC MODEL

$$\begin{aligned}
 [\text{Recd Res kWh/customer}] = & A + B \times [\text{Lag}(-1) \text{ Recd Res kWh/customer}] + C \times [\text{Lag}(-2) \text{ Recd Res kWh/customer}] + \\
 & D \times [\text{Lag}(-3) \text{ Recd Res kWh/customer}] + E \times [\text{Lag}(-12) \text{ Recd Res kWh/customer}] + F \times [\text{CDD 7603 average}] + \\
 & G \times [\text{Wet Bulb 9703 average}] + H \times [\text{Lag}(-3) \text{ Real (92\$) Recd Res \$/kWh}] + I \times [\text{Time Trend}] + \\
 & J \times [\text{m}_1 \text{ dummy}] + K \times [\text{m}_{10} \text{ dummy}]
 \end{aligned}$$

where,	A =	-0.162490	CONST	G =	0.050903	CDD 7603 avg
	B =	-0.158685	Lag (-1) Res Use	H =	0.452762	Wet bulb 9703 avg
	C =	0.144486	Lag (-2) Res Use	I =	0.000736	Time Trend
	D =	0.100763	Lag (-3) Res Use	J =	0.054745	Jan Dummy
	E =	0.512605	Lag (-12) Res Use	K =	-0.012196	Oct Dummy
	F =	-0.151619	Lag (-3) Real Res Price			

	<u>Y-Predicted</u>	<u>% Increase in</u>	<u>Adjusted (no DSM)</u>	<u>Actual Less</u>		<u>Customer</u>		<u>% Change</u>
	<u>from Equation</u>	<u>Y-predicted</u>	<u>Recd Actual Use</u>	<u>Fitted</u>	<u>Backcast</u>	<u>Count</u>	<u>Sales</u>	<u>in Sales</u>
1997			7,808			238,269	1,860.3	
1998	7,690		7,654	-36		239,487	1,833.1	
1999	7,755	0.84%	7,719	-36		241,167	1,861.7	
2000	7,811	0.73%	7,872	61		243,511	1,916.9	
2001	7,925	1.46%	7,904	-21		246,226	1,946.2	
2002	8,132	2.61%	8,148	16		248,765	2,026.9	
2003	8,260	1.58%	8,333	72		251,248	2,093.6	
2004	8,535	3.32%	8,598	64		253,670	2,181.1	
2005	8,528	-0.08%	8,487	-41	8,487	256,269	2,175.0	
2006	8,355	-2.03%			8,315	258,964	2,153.3	-1.0%
2007	8,357	0.02%			8,317	261,302	2,173.2	0.9%
2008	8,442	1.02%			8,402	263,543	2,214.3	1.9%
2009	8,506	0.76%			8,466	265,784	2,250.1	1.6%
2010	8,553	0.56%			8,513	268,026	2,281.7	1.4%
2011	8,634	0.95%			8,594	270,267	2,322.7	1.8%

Hawaiian Electric Company, Inc.

SCHEDULE "R" ANNUAL GWH SALES
August 2006 Forecast

Method	Recd 2004	Recd 2005	2006	2007	2008	2009	2010	2011
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SHORT-TERM FORECAST (MONTHLY ECONOMETRIC MODEL)

ST Econometric Model Results kWh/yr	8,481	8,360	8,315	8,317				
Average Customer Forecast - Aug 2006	253,670	256,269	258,964	261,302				
Time Series Model Res GWh Sales			2,153.3	2,173.2				
Acquired DSM Impact ¹			(32.8)	(28.7)				
Acquired 2006 Approvals DSM Impact ²			(0.3)	(0.3)				
Raw Res GWh Sales net of acq DSM	2,151.3	2,142.5	2,120.2	2,144.2				
Large Projects			-	-				
Bill 53 HMEC (after 2006)			-	(1.3)				
ST Res Use model forecast	2,151.3	2,142.5	2,120.2	2,142.9				
% Change			-1.0%	1.1%				

LONG-TERM FORECAST (ANNUAL ECONOMETRIC MODEL)

Res Use Econometric Model Results			8519	8548	8586	8613	8635	8661
Average Customer Forecast - Aug 2006	253,670	256,269	258,964	261,302	263,543	265,784	268,026	270,267
Res Use Econometric GWh Sales			2,206.1	2,233.6	2,262.8	2,289.2	2,314.4	2,340.8
Acquired DSM Impact ¹			(32.8)	(28.7)	(28.7)	(28.7)	(28.7)	(28.3)
Large Projects			-	-	-	-	-	-
Bill 53 HMEC			(1.4)	(2.7)	(4.0)	(5.4)	(6.7)	(8.0)
Res Use Econometric Model forecast			2171.9	2202.2	2230.1	2255.1	2279.0	2304.5
% Change				1.4%	1.3%	1.1%	1.1%	1.1%

Res Forecast no Adjustments ³ 2,151.3 2,142.5 2120.2 2142.9 2170.0 2194.3 2217.6 2242.4
-0.4% -1.0% 1.1% 1.3% 1.1% 1.1% 1.1%

¹ 1996-2005 installations approved through 2005.

² 1996-2005 installations approved Jan-Jun 2006. Doesn't include 2006 installations.

³ 2006 - 2007 ST Res Use Econometric model, 2008 - 2011 Res Use econometric model year-over-year percent growth.
Excludes adjustments for leap year, CHP, and future DSM

Hawaiian Electric Co., Inc.

COMMERCIAL SALES MODEL VARIABLES

Dependent variable	Commercial recorded kWh sales adjusted for installed DSM
LOG(COM_RECDD_ADJ(-X))	Commercial recorded sales, lag X months
LOG(CDD_7603_AVG)	Cooling Degree Days, 1976-2003 monthly average
LOG(WETBULB_9703_AVG)	Wet Bulb Temperature, 1997-2003 monthly average
LOG(E_NF_HON3(-1))	Non-Ag Jobs lag 1 month
M_2	Dummy variable, February
M_3	Dummy variable, March
M_5	Dummy variable, May
M_8	Dummy variable, August
M_11	Dummy variable, November

Hawaiian Electric Co., Inc.

COMMERCIAL SALES FORECAST MODEL

Dependent Variable: LOG(COM_RECD_ADJ)

Method: Least Squares

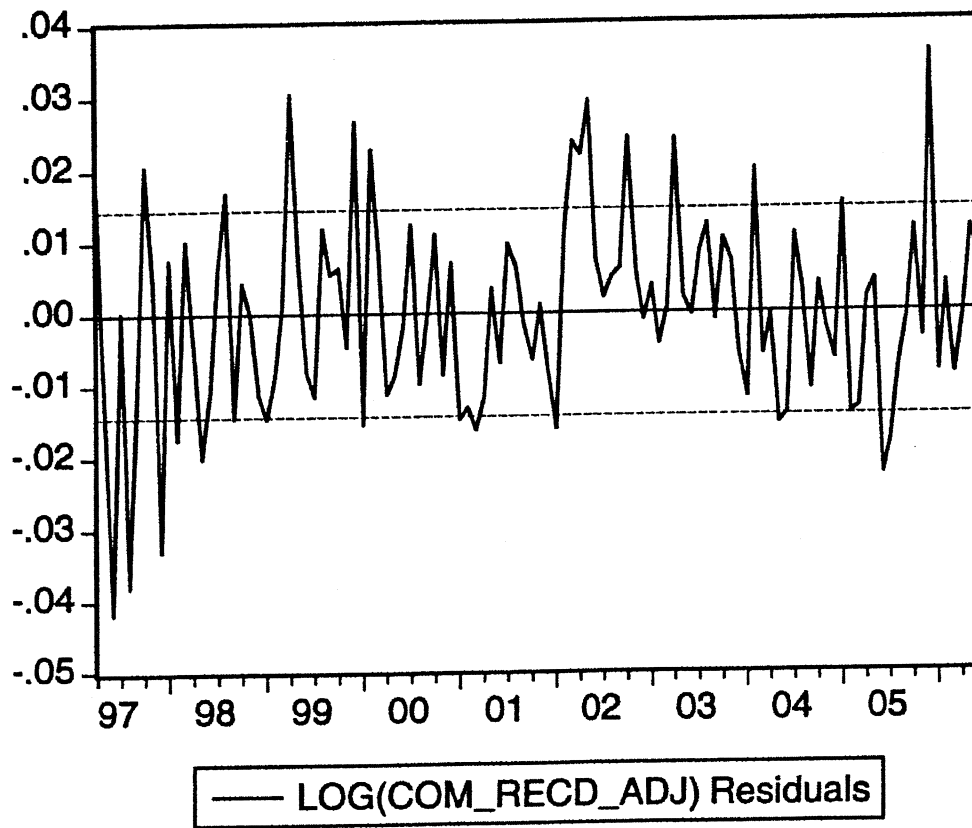
Date: 08/02/06 Time: 17:06

Sample (adjusted): 1997M04 2006M06

Included observations: 111 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	7.387270	0.560264	13.185340	0.0000
LOG(COM_RECD_ADJ(-2))	0.207213	0.036239	5.717941	0.0000
LOG(COM_RECD_ADJ(-3))	0.134555	0.052186	2.578393	0.0114
LOG(CDD_7603_AVG)	0.116329	0.015824	7.351345	0.0000
LOG(WETBULB_9703_AVG)	0.477978	0.112150	4.261961	0.0000
LOG(E_NF_HON3(-1))	0.497919	0.050511	9.857721	0.0000
M_2	-0.033753	0.006515	-5.180803	0.0000
M_3	0.037020	0.005486	6.748022	0.0000
M_5	0.030751	0.007641	4.024427	0.0001
M_8	0.025807	0.005940	4.344729	0.0000
M_11	-0.031596	0.005777	-5.469521	0.0000
R-squared	0.957332	Mean dependent var	19.924090	
Adjusted R-squared	0.953065	S.D. dependent var	0.066611	
S.E. of regression	0.014431	Akaike info criterion	-5.545045	
Sum squared resid	0.020825	Schwarz criterion	-5.276533	
Log likelihood	318.750000	F-statistic	224.366900	
Durbin-Watson stat	1.832890	Prob(F-statistic)	0.000000	

Views: com_tseq_rall3



Correlogram of Residuals

Date: 07/31/06 Time: 10:23						
Sample: 1997M04 2006M06						
Included observations: 111						
Autocorrelation	Partial Correlation	AC	PAC	Q-Stat	Prob	
		1	0.076	0.076	0.6529	0.419
		2	0.023	0.017	0.7136	0.700
		3	0.053	0.050	1.0376	0.792
		4	-0.003	-0.011	1.0384	0.904
		5	0.019	0.018	1.0801	0.956
		6	0.150	0.146	3.7510	0.710
		7	0.048	0.028	4.0324	0.776
		8	0.027	0.015	4.1205	0.846
		9	0.116	0.101	5.7821	0.762
		10	0.088	0.075	6.7414	0.750
		11	-0.019	-0.038	6.7858	0.816
		12	-0.030	-0.061	6.8979	0.864
		13	-0.019	-0.028	6.9421	0.905
		14	-0.074	-0.079	7.6588	0.906
		15	-0.060	-0.088	8.1298	0.918
		16	-0.032	-0.057	8.2609	0.941
		17	0.043	0.057	8.5109	0.954
		18	0.026	0.028	8.6016	0.968
		19	-0.039	-0.049	8.8054	0.977
		20	-0.111	-0.089	10.489	0.958
		21	-0.072	-0.017	11.206	0.959
		22	-0.157	-0.125	14.692	0.875
		23	-0.053	-0.031	15.086	0.892
		24	-0.066	-0.047	15.712	0.898
		25	-0.039	0.005	15.929	0.917
		26	-0.048	-0.031	16.266	0.930
		27	0.009	0.018	16.278	0.947
		28	0.012	0.063	16.302	0.961
		29	0.004	0.058	16.304	0.972
		30	-0.087	-0.055	17.465	0.967
		31	-0.023	0.026	17.549	0.975
		32	0.031	0.086	17.703	0.981
		33	-0.029	-0.024	17.838	0.985
		34	-0.000	-0.039	17.838	0.990
		35	0.073	0.049	18.709	0.989
		36	0.046	0.043	19.059	0.991

Breusch-Godfrey Serial Correlation LM Test:				
F-statistic	0.499986	Prob. F(12,88)	0.909494	
Obs*R-squared	7.084923	Prob. Chi-Square(12)	0.851951	
Test Equation:				
Dependent Variable: RESID				
Method: Least Squares				
Date: 07/31/06 Time: 10:23				
Sample: 1997M04 2006M06				
Included observations: 111				
Presample missing value lagged residuals set to zero.				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.367316	0.652052	0.563324	0.5746
LOG(COM_REC_D_ADJ(-2))	0.032041	0.045532	0.703691	0.4835
LOG(COM_REC_D_ADJ(-3))	-0.043325	0.064190	-0.674948	0.5015
LOG(CDD_7603_AVG)	0.002010	0.017319	0.116046	0.9079
LOG(WETBULB_9703_AVG)	-0.049882	0.127538	-0.391115	0.6967
LOG(E_NF_HON3(-1))	0.009592	0.054072	0.177397	0.8596
M_2	-0.001864	0.007765	-0.240040	0.8109
M_3	0.001812	0.006422	0.282098	0.7785
M_5	-0.007113	0.009223	-0.771219	0.4426
M_8	0.000766	0.006720	0.113938	0.9095
M_11	0.001825	0.006746	0.270452	0.7874
RESID(-1)	0.057761	0.115187	0.501450	0.6173
RESID(-2)	0.001464	0.122631	0.011936	0.9905
RESID(-3)	0.073812	0.118080	0.625104	0.5335
RESID(-4)	-0.046829	0.115309	-0.406121	0.6856
RESID(-5)	0.003836	0.113444	0.033813	0.9731
RESID(-6)	0.183150	0.114857	1.594589	0.1144
RESID(-7)	0.030820	0.119201	0.258557	0.7966
RESID(-8)	0.003191	0.117162	0.027236	0.9783
RESID(-9)	0.117899	0.115943	1.016869	0.3120
RESID(-10)	0.108072	0.124412	0.868661	0.3874
RESID(-11)	-0.030902	0.126558	-0.244171	0.8077
RESID(-12)	-0.086888	0.115970	-0.749226	0.4557
R-squared	0.063828	Mean dependent var	-2.06E-15	
Adjusted R-squared	-0.170215	S.D. dependent var	0.013759	
S.E. of regression	0.014884	Akaike info criterion	-5.394785	
Sum squared resid	0.019496	Schwarz criterion	-4.833351	
Log likelihood	322.4106	F-statistic	0.272720	
Durbin-Watson stat	2.001953	Prob(F-statistic)	0.999473	

COMMERCIAL SALES MODEL VARIABLES

Date	com_recd	com_recd_adj	E_NF_Hon3	CDD	Wet_Bulb	m_2	m_3	m_5	m_8	m_11
Jan-97	404741122	405436005	401.7	231	67.1	0	0	0	0	0
Feb-97	374630595	375375109	404.8	279	67.5	1	0	0	0	0
Mar-97	423133614	424298922	407.2	326	68.8	0	1	0	0	0
Apr-97	419849501	421193652	404.4	346	69.1	0	0	0	0	0
May-97	422805793	424249273	406.7	355	68.1	0	0	1	0	0
Jun-97	432784994	434417705	407.2	489	72.0	0	0	0	0	0
Jul-97	456659960	458490008	398.2	521	72.5	0	0	0	0	0
Aug-97	454019187	455967542	400.3	553	73.3	0	0	0	1	0
Sep-97	461761864	463806259	396.8	537	73.7	0	0	0	0	0
Oct-97	469384398	471733232	401.1	492	72.7	0	0	0	0	0
Nov-97	421568097	424027235	405.4	350	68.6	0	0	0	0	1
Dec-97	407851599	410422349	409.6	288	66.5	0	0	0	0	0
Jan-98	407123514	409849553	399.0	238	65.8	0	0	0	0	0
Feb-98	366753863	369541197	402.4	227	65.1	1	0	0	0	0
Mar-98	427782290	430632649	404.4	322	67.1	0	1	0	0	0
Apr-98	393616446	396497283	402.1	309	66.1	0	0	0	0	0
May-98	417168069	420204336	403.1	368	67.2	0	0	1	0	0
Jun-98	420551314	423652192	402.2	407	69.1	0	0	0	0	0
Jul-98	436127836	439326613	395.1	463	69.7	0	0	0	0	0
Aug-98	464184470	467502953	397.1	506	71.9	0	0	0	1	0
Sep-98	444674977	448168220	396.9	489	73.1	0	0	0	0	0
Oct-98	455909950	459525935	398.7	464	72.3	0	0	0	0	0
Nov-98	426046863	429804566	403.0	390	70.4	0	0	0	0	1
Dec-98	418738594	422617585	406.9	310	68.2	0	0	0	0	0
Jan-99	405610414	409560042	392.3	267	67.5	0	0	0	0	0
Feb-99	375464669	379452440	396.7	248	66.2	1	0	0	0	0
Mar-99	415904991	420002875	399.8	305	66.2	0	1	0	0	0
Apr-99	409802325	414020790	400.8	317	66.9	0	0	0	0	0
May-99	434510879	438833163	402.2	383	69.2	0	0	1	0	0
Jun-99	424346877	428862253	403.9	417	69.4	0	0	0	0	0
Jul-99	436256958	440901187	396.2	452	70.8	0	0	0	0	0
Aug-99	460210733	464971773	399.8	500	70.6	0	0	0	1	0
Sep-99	445441968	450283230	400.3	460	71.0	0	0	0	0	0
Oct-99	449219878	454210550	403.8	421	71.4	0	0	0	0	0
Nov-99	420244544	425279273	408.5	361	69.9	0	0	0	0	1
Dec-99	436349746	441541674	413.7	289	69.5	0	0	0	0	0
Jan-00	396849626	402140148	399.1	241	66.1	0	0	0	0	0
Feb-00	399536513	404924802	406.3	256	68.1	1	0	0	0	0
Mar-00	434434274	439889187	409.8	331	68.4	0	1	0	0	0
Apr-00	402734626	408304568	409.6	318	67.5	0	0	0	0	0
May-00	444931131	450677510	412.9	419	69.7	0	0	1	0	0
Jun-00	445979790	451800790	416.1	470	71.7	0	0	0	0	0
Jul-00	466155473	472239935	407.6	508	72.7	0	0	0	0	0
Aug-00	469909910	476259915	409.0	517	72.6	0	0	0	1	0
Sep-00	463748817	470214580	413.1	476	72.9	0	0	0	0	0
Oct-00	474277746	480791066	415.3	482	72.4	0	0	0	0	0
Nov-00	434643199	441290292	420.3	382	71.1	0	0	0	0	1
Dec-00	442968883	449764262	424.5	307	69.4	0	0	0	0	0
Jan-01	434004326	440933726	405.9	332	69.8	0	0	0	0	0
Feb-01	392554395	399564716	415.2	262	68.5	1	0	0	0	0
Mar-01	433681739	440779558	417.9	319	68.2	0	1	0	0	0
Apr-01	419526085	426656391	413.0	356	69.2	0	0	0	0	0
May-01	449074018	456267294	414.3	415	69.5	0	0	1	0	0
Jun-01	441160261	448449073	419.1	451	70.4	0	0	0	0	0
Jul-01	466902340	474282281	409.3	515	71.7	0	0	0	0	0
Aug-01	480210493	487647240	410.6	541	72.6	0	0	0	1	0
Sep-01	465558878	473058970	412.3	522	72.1	0	0	0	0	0
Oct-01	462160499	469708120	408.3	467	71.4	0	0	0	0	0
Nov-01	434351034	441973684	410.7	375	70.8	0	0	0	0	1
Dec-01	436752289	444383839	413.4	357	69.6	0	0	0	0	0
Jan-02	417240275	424880477	401.8	292	69.1	0	0	0	0	0
Feb-02	382894365	390659382	408.3	234	64.8	1	0	0	0	0
Mar-02	432375577	440177837	411.0	290	66.4	0	1	0	0	0
Apr-02	426763155	434599727	405.0	360	69.4	0	0	0	0	0
May-02	459149712	467115722	414.7	414	71.1	0	0	1	0	0
Jun-02	454664215	462753320	419.6	481	71.2	0	0	0	0	0
Jul-02	466616152	474765058	408.0	503	72.2	0	0	0	0	0
Aug-02	483474992	491700265	409.0	539	72.9	0	0	0	1	0
Sep-02	466795547	475047406	413.0	495	72.1	0	0	0	0	0

Hawaiian Electric Co., Inc.

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COMMERCIAL SALES MODEL VARIABLES

Date	com_rec	com_rec_adj	E_NF_Hon3	CDD	Wet_Bulb	m_2	m_3	m_5	m_8	m_11
Oct-02	479500444	487786737	416.5	479	71.6	0	0	0	0	0
Nov-02	440877432	449221212	421.3	383	70.4	0	0	0	0	1
Dec-02	439531241	447903628	426.2	329	68.0	0	0	0	0	0
Jan-03	416484856	425017044	414.2	240	66.2	0	0	0	0	0
Feb-03	389631183	398196590	418.8	250	65.9	1	0	0	0	0
Mar-03	444739190	453457802	421.0	338	69.4	0	1	0	0	0
Apr-03	433306704	442064976	416.6	374	68.6	0	0	0	0	0
May-03	454026438	462880231	421.2	439	69.4	0	0	1	0	0
Jun-03	455484736	464425719	420.8	471	71.0	0	0	0	0	0
Jul-03	475004499	484114774	414.1	545	72.5	0	0	0	0	0
Aug-03	490850145	500016769	414.6	573	72.2	0	0	0	1	0
Sep-03	472197133	481411987	417.2	518	72.7	0	0	0	0	0
Oct-03	487461446	496706931	420.9	504	73.9	0	0	0	0	0
Nov-03	452168477	461515572	426.4	420	71.1	0	0	0	0	1
Dec-03	445102350	454532362	429.8	336	68.8	0	0	0	0	0
Jan-04	426699764	436205081	419.0	272	68.3	0	0	0	0	0
Feb-04	427512845	437087010	423.2	323	69.7	1	0	0	0	0
Mar-04	439387974	448999423	425.9	317	68.2	0	1	0	0	0
Apr-04	439817079	449537785	426.3	371	70.6	0	0	0	0	0
May-04	469274910	479150572	429.8	453	73.4	0	0	1	0	0
Jun-04	461287588	471194063	430.3	496	72.5	0	0	0	0	0
Jul-04	489760066	499720196	424.7	556	73.5	0	0	0	0	0
Aug-04	499848257	509897778	425.9	558	74.0	0	0	0	1	0
Sep-04	488465098	498579933	429.3	537	75.6	0	0	0	0	0
Oct-04	492513583	502765931	435.2	517	72.8	0	0	0	0	0
Nov-04	456082505	466380068	442.5	383	71.7	0	0	0	0	1
Dec-04	453272475	463755881	444.1	324	68.7	0	0	0	0	0
Jan-05	442155077	452677369	429.9	245	68.6	0	0	0	0	0
Feb-05	398755418	409299987	437.3	255	66.5	1	0	0	0	0
Mar-05	435464639	446053547	440.0	280	66.6	0	1	0	0	0
Apr-05	443652464	454311948	440.6	419	68.6	0	0	0	0	0
May-05	481199007	491914363	443.8	514	71.2	0	0	1	0	0
Jun-05	466340931	477209207	444.3	537	71.7	0	0	0	0	0
Jul-05	482272794	493310826	437.5	570	72.0	0	0	0	0	0
Aug-05	501927925	513075766	440.6	588	72.4	0	0	0	1	0
Sep-05	485313985	496587900	443.9	491	72.6	0	0	0	0	0
Oct-05	485582189	496987237	448.9	430	70.7	0	0	0	0	0
Nov-05	456605088	468092104	454.2	371	70.7	0	0	0	0	1
Dec-05	461730829	473479298	458.0	270	67.2	0	0	0	0	0
Jan-06	443056086	454862033	444.6	293	67.6	0	0	0	0	0
Feb-06	398790135	410669021	453.6	205	65.0	1	0	0	0	0
Mar-06	453569155	465548587	455.4	275	69.2	0	1	0	0	0
Apr-06	424590442	436761618	453.9	299	66.4	0	0	0	0	0
May-06	454196782	466609773	456.3	324	66.8	0	0	1	0	0
Jun-06	469607046	482101975	454.9	458	69.8	0	0	0	0	0
Jul-06			447.3	505	71.7	0	0	0	0	0
Aug-06			449.4	532	72.3	0	0	0	1	0
Sep-06			452.4	506	72.5	0	0	0	0	0
Oct-06			456.8	478	72.2	0	0	0	0	0
Nov-06			462.7	387	70.3	0	0	0	0	1
Dec-06			466.7	312	68.6	0	0	0	0	0
Jan-07			448.5	259	67.4	0	0	0	0	0
Feb-07			454.5	237	66.6	1	0	0	0	0
Mar-07			457.6	307	67.8	0	1	0	0	0
Apr-07			457.1	342	68.1	0	0	0	0	0
May-07			460.5	404	69.2	0	0	1	0	0
Jun-07			461.7	457	70.7	0	0	0	0	0
Jul-07			454.0	505	71.7	0	0	0	0	0
Aug-07			456.2	532	72.3	0	0	0	1	0
Sep-07			459.2	506	72.5	0	0	0	0	0
Oct-07			463.6	478	72.2	0	0	0	0	0
Nov-07			469.7	387	70.3	0	0	0	0	1
Dec-07			473.7	312	68.6	0	0	0	0	0

HAWAIIAN ELECTRIC COMPANY, INC.
TOTAL COMMERCIAL SALES MONTHLY ECONOMETRIC MODEL

$$[\text{Recd Commercial kWh Sales}] = A + B \times [\text{Lag}(-2) \text{ Recd Comm Sales}] + C \times [\text{Lag}(-3) \text{ Recd Comm Sales}] + \\
D \times [\text{CDD 7603 average}] + E \times [\text{Wet Bulb 9703 average}] + F \times [\text{Lag}(-1) \text{ Hon Non-Ag Jobs}] + G \times [\text{m}_2 \text{ dummy}] + \\
H \times [\text{m}_3 \text{ dummy}] + I \times [\text{m}_5 \text{ dummy}] + J \times [\text{m}_8 \text{ dummy}] + K \times [\text{m}_{11} \text{ dummy}]$$

where,	A =	7.387270	CONST	G =	-0.337530	Feb dummy
	B =	0.207213	Lag (-2) Comm Sal	H =	0.037020	Mar dummy
	C =	0.134555	Lag (-3) Comm Sal	I =	0.030751	May dummy
	D =	0.116329	CDD 7603 avg	J =	0.025807	Aug dummy
	E =	0.477978	Wet bulb 9703 avg	K =	-0.031596	Nov dummy
	F =	0.497919	Lag (-1) Hon Non-Ag Jobs			

	<u>Y-Predicted</u> <u>from Equation</u>	<u>% Increase in</u> <u>Y-predicted</u>	<u>Adjusted (no DSM)</u> <u>Actual Use</u>	<u>Actual Less</u> <u>Fitted</u> <u>Difference</u>	<u>Backcast</u>	<u>GWh</u> <u>Sales</u>	<u>% Change</u> <u>in Sales</u>
1997			5,169,417,291			5,169.4	
1998	5,142,173,040		5,117,323,082	-24,849,958		5,117.3	
1999	5,148,461,271	0.12%	5,570,059,398	421,598,127		5,570.1	
2000	5,339,011,594	3.70%	5,348,297,055	9,285,461		5,348.3	
2001	5,439,628,292	1.88%	5,403,704,892	-35,923,400		5,403.7	
2002	5,371,956,011	-1.24%	5,446,610,771	74,654,760		5,446.6	
2003	5,480,207,181	2.02%	5,524,340,757	44,133,576		5,524.3	
2004	5,679,755,721	3.64%	5,663,273,721	-16,482,000		5,663.3	
2005	5,691,886,716	0.21%	5,672,999,552	-18,887,164	5,672,999,552	5,673.0	
2006	5,675,868,563	-0.28%			5,657,034,551	5,657.0	-0.3%
2007	5,798,573,826	2.16%			5,779,332,646	5,779.3	2.2%
2008	5,849,677,944	0.88%			5,830,267,187	5,830.3	0.9%
2009	5,894,053,090	0.76%			5,874,495,085	5,874.5	0.8%
2010	5,936,232,908	0.72%			5,916,534,939	5,916.5	0.7%
2011	5,976,886,953	0.68%			5,957,054,083	5,957.1	0.7%

Hawaiian Electric Company, Inc.
COMMERCIAL (G,J,H,K,P) ANNUAL GWH SALES
August 2006 Forecast

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Recd 2004	Recd 2005	2006	2007	2008	2009	2010	2011
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SHORT-TERM FORECAST (MONTHLY ECONOMETRIC MODEL)

ST Total Com'l Econometric Model	5,657.0	5,779.3
Acquired DSM Impact ¹	(136.4)	(135.3)
Acquired 2006 Approvals DSM Impact ²	(4.6)	(4.6)
ST Total Com'l Econm Model net of acq DSM	5,516.0	5,639.4
HMEC (after 2006)	-	(0.2)
Bill 54 HMEC (after 2006)	-	(1.1)
Energy Effic Improv (after 2006)	-	(16.3)
ST Com GWh Sales net of acq DSM, HMEC, Eff Imprv	5,516.0	5,621.8

LONG-TERM FORECAST (ANNUAL ECONOMETRIC MODEL)

LT Total Com'l Econometric Model	5,750.1	5,824.6	5,896.2	5,964.1	6,028.9	6,091.3
Acquired DSM Impact ¹	(136.4)	(135.3)	(135.1)	(135.1)	(135.1)	(132.8)
LT Total Com'l Econm Model net of acq DSM	5,613.7	5,689.3	5,761.1	5,829.0	5,893.8	5,958.5
Transfer / Billings	-	-	-	-	-	-
HMEC	-	-	(0.1)	-	-	-
Bill 54 HMEC	(1.2)	(2.3)	(3.5)	(4.6)	(5.8)	(6.9)
Energy Effic Improv	(11.9)	(28.3)	(44.8)	(58.9)	(74.1)	(88.7)
LT Com GWh Sales net of acq DSM, HMEC, Eff Imprv	5,600.6	5,658.7	5,712.7	5,765.5	5,813.9	5,862.9

Hawaiian Electric Company, Inc.
COMMERCIAL (G,J,H,K,P) ANNUAL GWH SALES
August 2006 Forecast

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	Recd 2004	Recd 2005	2006	2007	2008	2009	2010	2011
Retail				6.6	6.6	6.6	6.6	6.6
Retail					2.8	2.8	2.8	2.8
Retail					2.5	4.4	4.4	4.4
Retail					2.9	4.4	4.4	4.4
Grocery					2.3	2.3	2.3	2.3
Grocery					2.1	2.6	2.6	2.6
Education						3.2	9.6	9.6
Education / Research						4.7	6.2	6.2
Education / Research							6.2	6.2
Health						2.3	4.5	4.5
Health						1.8	3.5	3.5
Hotel					2.2	7.4	8.2	8.2
Hotel					7.8	15.5	15.5	15.5
Hotel					6.9	13.8	13.8	13.8
Hotel						7.8	15.5	15.5
Hotel							7.8	15.5
Housing (Condo)					2.3	3.1	3.1	3.1
Housing (Condo)					2.4	3.2	3.2	3.2
Housing (Condo)					5.8	5.8	5.8	5.8
Housing (Condo)					2.1	4.3	4.3	4.3
Housing (Condo)					1.4	2.8	2.8	2.8
Housing (Condo)						4.1	5.4	5.4
Housing (Condo)						1.0	3.1	3.1
Housing (Condo)						1.2	2.4	2.4
Service / Amusement					1.5	3.0	3.0	3.0
Manufacturing				(7.0)	(14.0)	(14.0)	(14.0)	(14.0)
Pumping				0.8	4.6	7.3	7.3	7.3
Military					15.5	16.9	16.9	16.9
Military						13.9	18.5	18.5
Military						2.1	5.1	5.1
Military			(7.5)	(30.0)	(30.0)	(30.0)	(30.0)	(30.0)
Military				5.6	8.5	16.7	27.1	31.3
Military							15.3	30.7
Military			(0.7)	(1.6)	(2.8)	(3.6)	(4.6)	(5.6)
Subtotal Large Projects ³			(8.2)	(25.6)	33.4	117.4	188.6	214.9
ST Com GWh Sales forecast			5,507.8	5,596.2				
% Change				1.6%				
LT Com GWh Sales forecast			5,592.4	5,633.1	5,746.1	5,882.9	6,002.5	6,077.8
% Change				0.7%	2.0%	2.4%	2.0%	1.3%
Com GWh Forecast no Adj ⁴	5,543.9	5,541.0	5,507.8	5,596.2	5,708.5	5,844.4	5,963.2	6,038.0
% Incr.		-0.1%	-0.6%	1.6%	2.0%	2.4%	2.0%	1.3%

¹ 1996-2005 installations approved through 2005. Applied to both ST and LT models.

² 1996-2005 installations approved Jan-Jun 2006, no 2006 installations. Only applied to ST econometric model, LT didn't include addback for 2006 approvals.

³ Large project impacts not included in historical trends from August 2006 forecast, incremental above 2006.

⁴ 2006-07 ST econometric model, 2008-11 LT econometric model year-over-year percent growth. Excludes adjustments for leap year, CHP, and future DSM.

Hawaiian Electric Company, Inc.
RECOMMENDED AUGUST 2006 SALES FORECAST

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SALES FORECAST (WITHOUT ANY ADJUSTMENTS)

Rate	Recorded						
	2005	2006	2007	2008	2009	2010	2011
R	2,142.5	2,120.2	2,142.9	2,170.0	2,194.3	2,217.6	2,242.4
% Incr.		-1.0%	1.1%	1.3%	1.1%	1.1%	1.1%
G	369.5	363.8	373.0	378.8	384.3	389.5	395.0
% Incr.		-1.5%	2.5%	1.6%	1.5%	1.4%	1.4%
J	2,020.5	2,024.9	2,079.9	2,118.0	2,163.3	2,203.9	2,243.3
% Incr.		0.2%	2.7%	1.8%	2.1%	1.9%	1.8%
H	52.6	45.8	40.6	35.9	31.9	28.6	25.8
% Incr.		-12.9%	-11.4%	-11.6%	-11.1%	-10.3%	-9.8%
P	3,098.4	3,073.3	3,102.7	3,175.8	3,264.9	3,341.2	3,373.9
% Incr.		-0.8%	1.0%	2.4%	2.8%	2.3%	1.0%
F	37.8	37.8	37.8	37.8	37.8	37.8	37.8
% Incr.		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
TOTAL	7,721.3	7,665.8	7,776.9	7,916.3	8,076.5	8,218.6	8,318.2
% Incr.		-0.7%	1.4%	1.8%	2.0%	1.8%	1.2%

LEAP YEAR IMPACTS

R	0.0	0.0	5.9	0.0	0.0	0.0
G	0.0	0.0	1.0	0.0	0.0	0.0
J	0.0	0.0	5.8	0.0	0.0	0.0
H	0.0	0.0	0.1	0.0	0.0	0.0
P	0.0	0.0	8.7	0.0	0.0	0.0
F	0.0	0.0	0.1	0.0	0.0	0.0
TOTAL	0.0	0.0	21.6	0.0	0.0	0.0

3RD PARTY CHP IMPACTS

J	0.0	0.0	(3.2)	(9.6)	(16.0)	(22.3)
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NEM IMPACTS

R	(0.3)	(0.5)	(0.7)	(0.9)	(1.2)	(1.5)
J	(0.3)	(1.2)	(2.4)	(3.3)	(4.5)	(5.8)
TOTAL	(0.6)	(1.7)	(3.1)	(4.2)	(5.7)	(7.3)

Hawaiian Electric Company, Inc.
RECOMMENDED AUGUST 2006 SALES FORECAST

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RECOMMENDED FORECAST (NOT REDUCED BY FUTURE DSM)

	Recorded						
Rate	2005	2006	2007	2008	2009	2010	2011
R	2,142.5	2,119.9	2,142.4	2,175.2	2,193.4	2,216.4	2,240.9
% Incr.		-1.1%	1.1%	1.5%	0.8%	1.0%	1.1%
G	369.5	363.8	373.0	379.8	384.3	389.5	395.0
% Incr.		-1.5%	2.5%	1.8%	1.2%	1.4%	1.4%
J	2,020.5	2,024.6	2,078.7	2,118.2	2,150.4	2,183.4	2,215.2
% Incr.		0.2%	2.7%	1.9%	1.5%	1.5%	1.5%
H	52.6	45.8	40.6	36.0	31.9	28.6	25.8
% Incr.		-12.9%	-11.4%	-11.3%	-11.4%	-10.3%	-9.8%
P	3,098.4	3,073.3	3,102.7	3,184.5	3,264.9	3,341.2	3,373.9
% Incr.		-0.8%	1.0%	2.6%	2.5%	2.3%	1.0%
F	37.8	37.8	37.8	37.9	37.8	37.8	37.8
% Incr.		0.0%	0.0%	0.3%	-0.3%	0.0%	0.0%
TOTAL	7,721.3	7,665.2	7,775.2	7,931.6	8,062.7	8,196.9	8,288.6
% Incr.		-0.7%	1.4%	2.0%	1.7%	1.7%	1.1%

FUTURE DSM

R	(1.5)	(13.5)	(30.1)	(42.2)	(52.6)	(62.1)
G	(0.4)	(1.2)	(2.1)	(2.9)	(3.7)	(4.5)
J	(3.3)	(9.9)	(17.1)	(24.3)	(31.6)	(38.8)
H	0.0	(0.1)	(0.2)	(0.2)	(0.2)	(0.3)
P	(9.8)	(29.7)	(50.8)	(71.8)	(92.8)	(113.7)
TOTAL	(15.0)	(54.4)	(100.3)	(141.4)	(180.9)	(219.4)

RECOMMENDED FORECAST (REDUCED BY FUTURE DSM)

R	2,142.5	2,118.4	2,128.9	2,145.1	2,151.2	2,163.8	2,178.8
% Incr.		-1.1%	0.5%	0.8%	0.3%	0.6%	0.7%
G	369.5	363.4	371.8	377.7	381.4	385.8	390.5
% Incr.		-1.7%	2.3%	1.6%	1.0%	1.2%	1.2%
J	2,020.5	2,021.3	2,068.8	2,101.1	2,126.1	2,151.8	2,176.4
% Incr.		0.0%	2.3%	1.6%	1.2%	1.2%	1.1%
H	52.6	45.8	40.5	35.8	31.7	28.4	25.5
% Incr.		-12.9%	-11.6%	-11.6%	-11.5%	-10.4%	-10.2%
P	3,098.4	3,063.5	3,073.0	3,133.7	3,193.1	3,248.4	3,260.2
% Incr.		-1.1%	0.3%	2.0%	1.9%	1.7%	0.4%
F	37.8	37.8	37.8	37.9	37.8	37.8	37.8
% Incr.		0.0%	0.0%	0.3%	-0.3%	0.0%	0.0%
TOTAL	7,721.3	7,650.2	7,720.8	7,831.3	7,921.3	8,016.0	8,069.2
% Incr.		-0.9%	0.9%	1.4%	1.1%	1.2%	0.7%

Hawaiian Electric Co., Inc.

ALLOCATION FACTORS FOR COMMERCIAL SALES

Results of exponential smoothing, additive trend time series models

	Sch P	Sch J	Sch H	Sch G	Total
2002	3034.9	1893.7	70.3	351.5	5350.4
2003	3054.3	1938.9	61.9	361.4	5416.5
2004	3126.8	1990.4	57.9	368.8	5543.9
2005	3098.4	2020.6	52.6	369.5	5541.1
2006	3178.5	2100.6	44.2	379.2	5702.5
2007	3228.4	2167.2	37.9	390.6	5824.1
2008	3279.1	2235.8	32.4	402.3	5949.6
2009	3330.5	2306.6	27.5	414.3	6078.9
2010	3382.8	2379.7	23.2	426.6	6212.3
2011	3435.8	2455	19.4	439.4	6349.6

Allocations to Rate Schedules

	Sch P	Sch J	Sch H	Sch G	
2002	56.7%	35.4%	1.3%	6.6%	100.0%
2003	56.4%	35.8%	1.1%	6.7%	100.0%
2004	56.4%	35.9%	1.0%	6.7%	100.0%
2005	55.9%	36.5%	0.9%	6.7%	100.0%
2006	55.7%	36.8%	0.8%	6.6%	100.0%
2007	55.4%	37.2%	0.7%	6.7%	100.0%
2008	55.1%	37.6%	0.5%	6.8%	100.0%
2009	54.8%	37.9%	0.5%	6.8%	100.0%
2010	54.5%	38.3%	0.4%	6.9%	100.0%
2011	54.1%	38.7%	0.3%	6.9%	100.0%

HAWAIIAN ELECTRIC COMPANY, INC.
Docket No. 2006-0386, Test-Year 2007 DIRECT TESTIMONY
SCHEDULE R - RESIDENTIAL SERVICE

ESTIMATE OF TEST YEAR REVENUES

<u>PRESENT RATES</u>			
	<u>BILLING UNITS</u>	<u>UNIT PRICE</u>	<u>REVENUES \$1000S</u>
<u>ENERGY CHARGE:</u>	<u>(MWH)</u>	<u>c/kWh</u>	
NON-FUEL ENERGY CHARGE	2,128,900	7.7814	\$165,658.2
BASE FUEL ENERGY CHARGE	2,128,900	3.5140	<u>\$74,809.5</u>
SUBTOTAL			\$240,467.7
<u>CUSTOMER CHARGE:</u>	<u>BILLS</u>	<u>\$/MONTH</u>	
1 PHASE CHARGE	3,134,056	7.00	\$21,938.4
3 PHASE CHARGE	<u>1,568</u>	15.00	<u>\$23.5</u>
SUBTOTAL	3,135,624		\$21,961.9
<u>ADJUSTMENTS:</u>			
FUEL OIL ADJUSTMENT:	c/KWH	7.299	\$155,388.4
RATE ADJUSTMENT (AES REFUND):	(%)	-0.406%	(\$1,061.5)
MISCELLANEOUS **:			(\$1,033.1)
SUBTOTAL			<u>\$153,293.8</u>
TOTAL REVENUES AT PRESENT RATES			\$415,723.4
INTERIM RATE INCREASE REVENUES			\$17,252.2
TOTAL REVENUE AT CURRENT EFFECTIVE RATES			<u>\$432,975.6</u>

** INCLUDES Schedule E Adj., Minimum Bill Adj., Apartment House Discount, and Residential TOU Adjustment.

HAWAIIAN ELECTRIC COMPANY, INC.
Docket No. 2006-0386, Test-Year 2007 DIRECT TESTIMONY
SCHEDULE R - RESIDENTIAL SERVICE

DETERMINATION OF TEST-YEAR BILLING LOADS
BY CUSTOMER GROUP

<u>RECORDED:</u>	<u>NO. OF BILLS</u>		<u>MWH SALES</u>	
	<u>NUMBER OF BILLS</u>	<u>PERCENT OF TOTAL</u>	<u>MWH SALES</u>	<u>PERCENT OF TOTAL</u>
RESIDENTIAL-R 1 Phase	3,075,050	99.15	2,103,662	98.82
RESIDENTIAL-R 3 Phase	1,524	0.05	3,909	0.18
EMPLOYEES-E 1 Phase	24,961	0.80	21,219	1.00
EMPLOYEES-E 3 Phase	<u>0</u>	<u>0.00</u>	<u>0</u>	<u>0.00</u>
TOTAL R AND E	3,101,535	100.00	2,128,789	100.00
APT. HOUSE DISCOUNT	13,519	0.44	5,430	0.26

HAWAIIAN ELECTRIC COMPANY, INC.
Docket No. 2006-0386, Test-Year 2007 DIRECT TESTIMONY
SCHEDULE R - RESIDENTIAL SERVICE

DETERMINATION OF TEST-YEAR REVENUE ADJUSTMENTS
FOR MINIMUM CHARGE PROVISION

<u>1 PHASE</u>	<u>PRESENT RATES</u>
MINIMUM CHRG.,\$/MO.	16.00
BASE RATE,\$/kWh	0.112954
F.O.A.,\$/kWh	0.072990
CUSTOMER CHRG, \$/MO	7.00
MINIMUM kWh/MONTH	48.40

<u>3 PHASE</u>	
MINIMUM CHRG.,\$/MO.	16.00
BASE RATE,\$/kWh	0.112954
F.O.A.,\$/kWh	0.072990
CUSTOMER CHRG, \$/MO	15.00
MINIMUM kWh/MONTH	5.38

<u>1 PHASE</u>	<u>PRESENT RATES</u>	
	<u>RECORDED</u>	<u>FORECAST</u>
<u>SALES, MWH</u>		
TOTAL R,E 1 Phase	2,124,880	2,125,068
<= MIN.KWH 48 (58)	622	616
% OF TOTAL	0.029	

<u>NUMBER OF BILLS</u>		
TOTAL R,E 1 Phase	3,100,011	3,134,056
<= MIN.KWH 48 (58)	24,504	24,759
% OF TOTAL	0.790	

<u>3 PHASE</u>	<u>PRESENT RATES</u>	
	<u>RECORDED</u>	<u>FORECAST</u>
<u>SALES, MWH</u>		
TOTAL R,E 3 Phase	3,909	3,832
<= MIN.KWH 5 (29)	0	0
% OF TOTAL	0.001	

<u>NUMBER OF BILLS</u>		
TOTAL R,E 3 Phase	1,524	1,568
<= MIN.KWH 5 (29)	13	13
% OF TOTAL	0.853	

HAWAIIAN ELECTRIC COMPANY, INC.
Docket No. 2006-0386, Test-Year 2007 DIRECT TESTIMONY
SCHEDULE R - RESIDENTIAL SERVICE

ESTIMATES OF TEST-YEAR REVENUE ADJUSTMENTS
FOR MINIMUM CHARGE PROVISION

AT PRESENT RATES

<u>1 PHASE</u>	<u>UNITS BILLED</u>	<u>UNIT PRICE</u>	<u>REVENUES \$1000s</u>
IF NO PROVISION FOR MINIMUM CHRG.:	<u>MWH</u>	<u>c/KWh</u>	
BASE ENERGY CHARGE	616	11.2954	\$69.6
FUEL OIL ADJUSTMENT:	616	7.299	\$45.0
	<u>BILLS</u>	<u>\$/MONTH</u>	
CUSTOMER CHARGE	24,759	7.00	<u>\$173.3</u>
TOTAL, No Min Chrg Provision			\$287.9
	<u>BILLS</u>	<u>\$/MONTH</u>	
AS BILLED WITH MINIMUM CHARGE:	24,759	16.00	<u>\$396.1</u>
1 PHASE - MINIMUM BILL ADJ.			\$108.2

HAWAIIAN ELECTRIC COMPANY, INC.
Docket No. 2006-0386, Test-Year 2007 DIRECT TESTIMONY
SCHEDULE R - RESIDENTIAL SERVICE

ESTIMATES OF TEST-YEAR REVENUE ADJUSTMENTS
FOR MINIMUM CHARGE PROVISION

AT PRESENT RATES

<u>3 PHASE</u>	<u>UNITS BILLED</u>	<u>UNIT PRICE</u>	<u>REVENUES \$1000s</u>
IF NO PROVISION FOR MINIMUM CHRG.:	<u>MWH</u>	<u>c/KWh</u>	
BASE ENERGY CHARGE	-	11.2954	\$0.0
FUEL OIL ADJUSTMENT:	-	7.299	\$0.0
	<u>BILLS</u>	<u>\$/MONTH</u>	
CUSTOMER CHARGE	13	15.00	<u>\$0.2</u>
TOTAL, No Min Chrg Provision			\$0.2
	<u>BILLS</u>	<u>\$/MONTH</u>	
AS BILLED WITH MINIMUM CHARGE:	13	16.00	<u>\$0.2</u>
3 PHASE - MINIMUM BILL ADJ.			\$0.0

HAWAIIAN ELECTRIC COMPANY, INC.
Docket No. 2006-0386, Test-Year 2007 DIRECT TESTIMONY
SCHEDULE R - RESIDENTIAL SERVICE

ESTIMATE OF TEST-YEAR REVENUE ADJUSTMENTS
FOR EMPLOYEE SERVICE

ALL SINGLE PHASE

	RECORDED	FORECAST
MWH SALES:		
0-825 KWH	7,495	7,520
>825 KWH	13,724	13,769
TOTAL	21,219	21,289

NUMBER OF BILLS:		
0-825 KWH	14,120	14,190
>825 KWH	10,841	10,895
TOTAL	24,961	25,085

	UNITS BILLED (MWH)	UNIT PRICE \$/KWH	REVENUES \$1000s
EMPLOYEE DISCOUNT			
0-825 KWH			
ENERGY CHARGE	7520	11.2954	\$849.4
FUEL OIL ADJUSTMENT:	7520	7.299	\$548.9
SUBTOTAL			\$1,398.3
	BILLS		
CUSTOMER CHARGE	14190	7.00	\$99.3
TOTAL			\$1,497.6
-1/3 EMPLOYEE ADJUSTMENT			(\$499.2)

	UNITS BILLED (MWH)	UNIT PRICE \$/KWH	REVENUES \$1000s
EMPLOYEE DISCOUNT			
>825 KWH			
LIMITED to 825 KWH			
ENERGY CHARGE	8988	11.2954	\$1,015.2
FUEL OIL ADJUSTMENT:	8988	7.299	\$656.0
SUBTOTAL			\$1,671.2
	BILLS		
CUSTOMER CHARGE	10895	7.00	\$76.3
TOTAL			\$1,747.5
-1/3 EMPLOYEE ADJUSTMENT			(\$582.5)
TOTAL EMPLOYEE ADJ:			(\$1,081.7)

HAWAIIAN ELECTRIC COMPANY, INC.
Docket No. 2006-0386, Test-Year 2007 DIRECT TESTIMONY
SCHEDULE R - RESIDENTIAL SERVICE

DETERMINATION OF TEST-YEAR BILLING LOADS
FOR APARTMENT HOUSE COLLECTION PROVISION

	<u>PRESENT RATES</u>
MAX Bill 100% Disc.,\$/MO.	50.00
BASE ENERGY ,\$/KWH	0.112954
F.O.A., \$/KWH	0.07299
RATE ADJUSTMENT, %	(0.00406)
INTERIM RATE ADJUSTMENT, %	0.06600
CUST. CHG., \$/BILL	7.00
KWH BLOCK @ MAX.DISC.	220.62

	<u>PRESENT RATES</u>	
	<u>RECORDED (MWH)</u>	<u>FORECAST (MWH)</u>
<u>SALES:</u>		
0-220 (233) KWH	606	618
>220 (233) KWH	<u>4,824</u>	<u>4,917</u>
TOTAL	5,430	5,535
<u>NUMBER OF BILLS:</u>	<u>RECORDED BILLS</u>	<u>FORECAST BILLS</u>
0-220 (233) KWH	4,744	4,842
>220 (233) KWH	<u>8,775</u>	<u>8,955</u>
TOTAL	13,519	13,797

HAWAIIAN ELECTRIC COMPANY, INC.
Docket No. 2006-0386, Test-Year 2007 DIRECT TESTIMONY
SCHEDULE R - RESIDENTIAL SERVICE

ESTIMATE OF TEST-YEAR REVENUE ADJUSTMENTS
FOR APARTMENT HOUSE COLLECTION PROVISION

	<u>PRESENT RATES</u>		
	<u>UNITS BILLED</u>	<u>UNIT PRICE</u>	<u>REVENUES \$1000S</u>
Apt. Bills subject to 100% of Apt. House Discount	<u>MWH</u>	<u>c/kWh</u>	
ENERGY CHARGE	618	11.2954	\$69.8
	<u>Bills</u>	<u>\$/month</u>	
CUSTOMER CHARGE	4,842	7.00	<u>\$33.9</u>
TOTAL BASE CHARGES			<u>\$103.7</u>
FUEL OIL ADJUSTMENT:	7.299	c/KWH	\$45.1
RATE ADJUSTMENT (AES REFUND)	-0.406	(%)	<u>(\$0.4)</u>
TOTAL ADJUSTMENTS			<u>\$44.7</u>
TOTAL OF BILLS subject to 10% discount			\$148.4
10% APT DISC.			(\$14.8)
	<u>Bills</u>	<u>\$/month</u>	
Apt. House Bills subject to Maximum Discount	8,955	5.00	<u>(\$44.8)</u>
APT. HOUSE REVENUE ADJ.			(\$59.6)

HAWAIIAN ELECTRIC COMPANY, INC.
Docket No. 2006-0386, Test-Year 2007 DIRECT TESTIMONY
SCHEDULE R - RESIDENTIAL SERVICE

ESTIMATE OF TEST YEAR REVENUES

	<u>PRESENT RATES</u>		
	<u>BILLING</u> <u>UNITS</u>	<u>UNIT PRICE</u>	<u>REVENUES</u> <u>\$1000S</u>
<u>ENERGY CHARGE:</u>	<u>(MWH)</u>	<u>¢/kWh</u>	
NON-FUEL ENERGY CHARGE	2,128,900	7.7814	\$165,658.2
BASE FUEL ENERGY CHARGE	2,128,900	3.5140	<u>\$74,809.5</u>
SUBTOTAL			\$240,467.7
<u>CUSTOMER CHARGE:</u>	<u>BILLS</u>	<u>\$/MONTH</u>	
1 PHASE CHARGE	3,134,056	7.00	\$21,938.4
3 PHASE CHARGE	<u>1,568</u>	15.00	<u>\$23.5</u>
SUBTOTAL	3,135,624		\$21,961.9
<u>ADJUSTMENTS:</u>			
SCHEDULE E ADJ.			(\$1,081.7)
MINIMUM BILL ADJ. - 1 PHASE			\$108.2
MINIMUM BILL ADJ. - 3 PHASE			\$0.0
RESIDENTIAL TOU			\$0.0
APARTMENT HOUSE:			(\$59.6)
SUBTOTAL			<u>(\$1,033.1)</u>
TOTAL BASE REVENUE			\$261,396.5
<u>BILL ADJUSTMENTS:</u>			
FUEL OIL ADJUSTMENT:	<u>¢/KWH</u>	7.299	\$155,388.4
RATE ADJUSTMENT (AES REFUND):	<u>(%)</u>	-0.406%	<u>(\$1,061.5)</u>
TOTAL REVENUES			\$415,723.4

HAWAIIAN ELECTRIC COMPANY, INC.
Docket No. 2006-0386, Test-Year 2007 DIRECT TESTIMONY
SCHEDULE G - GENERAL SERVICE NON-DEMAND

ESTIMATE OF TEST YEAR REVENUES

PRESENT RATES

	<u>BILLING UNITS</u>	<u>UNIT PRICE</u>	<u>REVENUES \$1000S</u>
<u>CUSTOMER CHARGE:</u>	<u>BILLS</u>	<u>\$/month</u>	
1 PHASE - Regular	192,429	20.00	\$3,848.6
3 PHASE - Regular	<u>119,955</u>	45.00	<u>\$5,398.0</u>
SUBTOTAL	312,384		\$9,246.6
 <u>ENERGY CHARGE:</u>	 <u>(MWH)</u>	 <u>¢/kWh</u>	
G: Regular NON-DEMAND	<u>371,800</u>	11.1570	<u>\$41,481.7</u>
SUBTOTAL	371,800		\$41,481.7
 <u>ADJUSTMENTS</u>		 <u>Rate</u>	
FUEL OIL ADJUSTMENT:		7.299 ¢/KWH	\$27,137.7
RATE ADJUSTMENT (AES REFUND):		(0.406) (%)	(\$206.1)
MISCELLANEOUS **			<u>\$31.5</u>
SUBTOTAL			\$26,963.1
TOTAL REVENUES			\$77,691.4
INTERIM RATE INCREASE REVENUES			\$3,030.4
TOTAL REVENUE AT CURRENT EFFECTIVE RATES			<u>\$80,721.8</u>

HAWAIIAN ELECTRIC COMPANY, INC.
Docket No. 2006-0386, Test-Year 2007 DIRECT TESTIMONY
SCHEDULE G - GENERAL SERVICE NON-DEMAND

DETERMINATION OF TEST-YEAR BILLING LOADS

<u>TOTAL G:</u>	<u>RECORDED</u>	<u>FORECASTED</u>
SALES, MWH	367,340.7	371,800
NO. OF BILLS	295,128	312,384

DISTRIBUTION OF SALES AND BILLS BY PHASE

<u>RECORDED:</u>	<u>MWH SALES</u>		<u>NO. OF BILLS</u>	
	<u>SALES (MWH)</u>	<u>PERCENT OF TOTAL</u>	<u>NUMBER OF BILLS</u>	<u>PERCENT OF TOTAL</u>
1 PHASE	161,553.7	44.0	181,778	61.6
3 PHASE	<u>205,787.0</u>	<u>56.0</u>	<u>113,350</u>	<u>38.4</u>
TOTAL	367,340.7	100.0	295,128	100.0
<u>FORECAST:</u>	<u>PERCENT OF TOTAL</u>	<u>SALES (MWH)</u>	<u>PERCENT OF TOTAL</u>	<u>NUMBER OF BILLS</u>
1 PHASE	44.0	163,592	61.6	192,429
3 PHASE	<u>56.0</u>	<u>208,208</u>	<u>38.4</u>	<u>119,955</u>
TOTAL	100.0	371,800	100.0	312,384

HAWAIIAN ELECTRIC COMPANY, INC.
Docket No. 2006-0386, Test-Year 2007 DIRECT TESTIMONY
SCHEDULE G - GENERAL SERVICE NON-DEMAND

DETERMINATION OF TEST-YEAR BILLING LOADS
FOR DISTRIBUTION PRIMARY (DP) SERVICE

AT PRESENT RATES

RECORDED FORECAST

SALES, MWH

TOTAL G:	367,341	371,800
PRIMARY SVC.	78.939	78
% OF TOTAL	0.021%	

PRESENT RATES

	<u>BILLING UNITS MWH</u>	<u>UNIT PRICE CENTS/KWH</u>	<u>REVENUES \$1000S</u>
ENERGY CHARGE:	78	11.1570	\$8.7

% ADJ.

DP ADJUSTMENT:	-1.9	(\$0.2)
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HAWAIIAN ELECTRIC COMPANY, INC.
Docket No. 2006-0386, Test-Year 2007 DIRECT TESTIMONY
SCHEDULE G - GENERAL SERVICE NON-DEMAND

DETERMINATION OF TEST-YEAR BILLING LOADS
FOR DISTRIBUTION SECONDARY (DS) SERVICE

AT PRESENT RATES

RECORDED FORECAST

SALES, MWH

TOTAL G:	367,341	371,800
PRIMARY SVC.	13.729	15
% OF TOTAL	0.004%	

PRESENT RATES

	<u>BILLING UNITS MWH</u>	<u>UNIT PRICE CENTS/KWH</u>	<u>REVENUES \$1000S</u>
ENERGY CHARGE:	15	11.1570	\$1.7
		<u>% ADJ.</u>	
DS ADJUSTMENT:		-0.7	\$0.0

HAWAIIAN ELECTRIC COMPANY, INC.
Docket No. 2006-0386, Test-Year 2007 DIRECT TESTIMONY
SCHEDULE G - GENERAL SERVICE NON-DEMAND

DETERMINATION OF TEST-YEAR BILLING LOADS
FOR MINIMUM CHARGE PROVISION

1 PHASE

PRESENT
RATES

MINIMUM CHRG., \$/MO.	25.00
BASE RATE, \$/KWH	0.111570
F.O.A., \$/KWH	0.072990
CUSTOMER CHRG., \$/MO.	20.00
MINIMUM KWH/MONTH	27.09

3 PHASE

PRESENT
RATES

MINIMUM CHRG., \$/MO.	45.00
BASE RATE, \$/KWH	0.11157
F.O.A., \$/KWH	0.072990
CUSTOMER CHRG., \$/MO.	45.00
MINIMUM KWH/MONTH	0.00

HAWAIIAN ELECTRIC COMPANY, INC.
Docket No. 2006-0386, Test-Year 2007 DIRECT TESTIMONY
SCHEDULE G - GENERAL SERVICE NON-DEMAND

DETERMINATION OF TEST-YEAR BILLING LOADS
FOR MINIMUM CHARGE PROVISION

	<u>PRESENT RATES</u>	
	<u>RECORDED</u>	<u>FORECAST</u>
<u>SALES, MWH</u>		
TOTAL G	367,340.7	371,800
LT/EQ TO MIN. KWH		
1 PHASE	133.5	
3 PHASE	<u>0.0</u>	
TOTAL	133.5	134
% OF TOTAL	0.036	0.036
<u>NUMBER OF BILLS</u>		
TOTAL G	295,128	312,384
LT/EQ TO MIN. KWH		
1 PHASE	10,677	11,308
3 PHASE	<u>-</u>	<u>-</u>
TOTAL	10,677	11,308
% OF TOTAL	3.62	3.62

HAWAIIAN ELECTRIC COMPANY, INC.
Docket No. 2006-0386, Test-Year 2007 DIRECT TESTIMONY
SCHEDULE G - GENERAL SERVICE NON-DEMAND

ESTIMATE OF TEST-YEAR REVENUE ADJUSTMENTS
FOR MINIMUM CHARGE PROVISION

PRESENT RATES

	<u>UNITS BILLED</u>	<u>UNIT PRICE</u>	<u>REVENUES \$1000S</u>
IF NO PROVISION FOR MINIMUM CHRG.:	<u>MWH</u>	<u>\$/kWh</u>	
ENERGY CHARGE:	134	11.1570	\$15.0
FUEL OIL ADJUSTMENT	134	7.299	<u>\$9.8</u>
SUBTOTAL			\$24.8
	<u>BILLS</u>	<u>\$/MONTH</u>	
CUSTOMER CHARGE			
1 PHASE	11,308	20.00	\$226.2
3 PHASE	-	45.00	<u>\$0.0</u>
SUBTOTAL	11,308		<u>\$226.2</u>
Total Billed w/o Min Charge			<u>\$251.0</u>
	<u>BILLS</u>	<u>\$/MONTH</u>	
AS BILLED WITH MINIMUM CHARGE:			
1 PHASE	11,308	25.00	\$282.7
3 PHASE	-	45.00	<u>\$0.0</u>
Total Billed with Min Charge			<u>\$282.7</u>
MINIMUM BILL ADJUSTMENT			\$31.7

HAWAIIAN ELECTRIC COMPANY, INC.
Docket No. 2006-0386, Test-Year 2007
SCHEDULE H - COMMERCIAL COOKING, HEATING, AIR
CONDITIONING AND REFRIGERATION SERVICE

ESTIMATE OF TEST YEAR REVENUES

PRESENT RATES

	<u>BILLING UNITS</u>	<u>UNIT PRICE</u>	<u>REVENUES \$1000S</u>
	<u>MWH</u>	<u>¢/kWh</u>	
<u>ENERGY CHARGE:</u>	40,500	7.7422	\$3,135.6
	<u>kW</u>	<u>\$/kW</u>	
<u>DEMAND CHARGE:</u>	74,222	9.00	\$668.0
<u>CUSTOMER CHARGE:</u>	<u>BILLS</u>	<u>\$/month</u>	
1 PHASE	2,721	20.00	\$54.4
3 PHASE	<u>6,231</u>	45.00	<u>\$280.4</u>
SUBTOTAL	8,952		\$334.8
ADJUSTMENTS		<u>Rate</u>	
FUEL OIL ADJUSTMEN		7.299 ¢/KWH	\$2,956.1
RATE ADJUSTMENT (AES REFUND):		(0.406) (%)	(\$16.8)
MISCELLANEOUS **			<u>\$0.0</u>
TOTAL REVENUES			\$7,077.7
INTERIM RATE INCREASE REVENUES			\$276.4
TOTAL REVENUE AT CURRENT EFFECTIVE RATES			<u>\$7,354.1</u>

HAWAIIAN ELECTRIC COMPANY, INC.
Docket No. 2006-0386, Test-Year 2007
SCHEDULE H - COMMERCIAL COOKING, HEATING, AIR
CONDITIONING AND REFRIGERATION SERVICE

DETERMINATION OF TEST-YEAR BILLING LOADS

	<u>NO. OF BILLS</u>		<u>MWH SALES</u>	
	<u>NUMBER OF BILLS</u>	<u>PERCENT OF TOTAL</u>	<u>MWH SALES</u>	<u>PERCENT OF TOTAL</u>
<u>RECORDED:</u>				
RATE H:	<u>11,481</u>	<u>100.0</u>	<u>52,468</u>	<u>100.0</u>
TOTAL	11,481	100.0	52,468	100.0

	<u>NO. OF BILLS</u>		<u>MWH SALES</u>	
	<u>PERCENT OF TOTAL</u>	<u>NUMBER OF BILLS</u>	<u>PERCENT OF TOTAL</u>	<u>MWH SALES</u>
<u>FORECASTS:</u>				
RATE H:	<u>100.0</u>	<u>8,952</u>	<u>100.0</u>	<u>40,500</u>
TOTAL	100.0	8,952	100.0	40,500

HAWAIIAN ELECTRIC COMPANY, INC.
Docket No. 2006-0386, Test-Year 2007
SCHEDULE H - COMMERCIAL COOKING, HEATING, AIR
CONDITIONING AND REFRIGERATION SERVICE

DETERMINATION OF TEST-YEAR BILLING LOADS BY SERVICE PHASE

	<u>NUMBER OF BILLS</u>	<u>PERCENT OF TOTAL</u>	<u>BILLED KW</u>	<u>KWH/KW</u>
<u>RECORDED:</u>				
RATE H:				
1 PHASE	3,488	30.4	17,492.1	
3 PHASE	<u>7,993</u>	<u>69.6</u>	<u>78,663.9</u>	
TOTAL	11,481	100.0	96,156.0	
<u>RATES H TOTAL</u>				
1 PHASE	3,488	30.4	17,492.1	
3 PHASE	<u>7,993</u>	<u>69.6</u>	<u>78,663.9</u>	
TOTAL	11,481	100.0	96,156.0	545.66
	<u>PERCENT OF TOTAL</u>	<u>NUMBER OF BILLS</u>		
<u>FORECASTS:</u>				
1 PHASE	30.4	2,721		
3 PHASE	<u>69.6</u>	<u>6,231</u>		
TOTAL	100.0	8,952	74,222	

HAWAIIAN ELECTRIC COMPANY, INC.
Docket No. 2006-0386, Test-Year 2007
SCHEDULE H - COMMERCIAL COOKING, HEATING, AIR
CONDITIONING AND REFRIGERATION SERVICE

DETERMINATION OF TEST-YEAR BILLS BY SERVICE PHASE

	<u>PERCENT OF TOTAL</u>	<u>NUMBER OF BILLS</u>
<u>FORECAST:</u>		
<u>RATE H:</u>		
1 PHASE	30.4	2,721
3 PHASE	<u>69.6</u>	<u>6,231</u>
TOTAL	100.0	8,952

HAWAIIAN ELECTRIC COMPANY, INC.
Docket No. 2006-0386, Test-Year 2007
SCHEDULE H - COMMERCIAL COOKING, HEATING, AIR
CONDITIONING AND REFRIGERATION SERVICE

ESTIMATE OF TEST YEAR REVENUES

	<u>PRESENT RATES</u>		
	<u>BILLING UNITS</u>	<u>UNIT PRICE</u>	<u>REVENUES \$1000S</u>
	<u>MWH</u>	<u>¢/kWh</u>	
<u>ENERGY CHARGE:</u>	40,500	7.7422	\$3,135.6
	<u>kW</u>	<u>\$/kW</u>	
<u>DEMAND CHARGE:</u>	74,222	9.00	\$668.0
<u>CUSTOMER CHARGE:</u>	<u>BILLS</u>	<u>\$/month</u>	
1 PHASE	2,721	20.00	\$54.4
3 PHASE	<u>6,231</u>	45.00	<u>\$280.4</u>
SUBTOTAL	8,952		\$334.8
SCHEDULE E ADJUSTMENT			\$0.0
TOTAL BASE REVENUE			<u>\$4,138.4</u>
ADJUSTMENTS	<u>Rate</u>		
FUEL OIL ADJUSTMENT:	7.299	¢/KWH	\$2,956.1
RATE ADJUSTMENT (AES REFUND):	(0.406)	(%)	(\$16.8)
UNADJUSTED TOTAL REVENUE			<u>\$7,077.7</u>
RIDER ADJUSTMENTS			\$0.0
TOTAL REVENUES			<u>\$7,077.7</u>

HAWAIIAN ELECTRIC COMPANY, INC.
Docket No. 2006-0386, Test-Year 2007
Schedule J - General Service Demand

Estimate of Test Year Revenues

PRESENT RATES			
	BILLING UNITS	UNIT PRICE	REVENUES \$000s
<u>ENERGY CHARGE:</u>	<u>(MWH)</u>	<u>¢/kWh</u>	
0 - 200 KWH/KW	1,198,252	8.6900	\$104,128.1
201 - 400 KWH/KW	697,152	7.5419	\$52,578.5
> 400 KWH/KW	173,396	6.5130	\$11,293.3
TOTAL	2,068,800		\$167,999.9
<u>DEMAND CHARGE:</u>	<u>kW</u>	<u>\$/kW</u>	
ALL BILLING KW	6,609,417	5.75	\$38,004.1
<u>CUSTOMER CHARGE:</u>	<u>BILLS</u>	<u>\$/month</u>	
1 PHASE	6,621	35.00	\$231.7
3 PHASE	74,319	60.00	\$4,459.1
SUBTOTAL	80,940		\$4,690.8
ADJUSTMENTS:			
MISCELLANEOUS **			(\$1,924.0)
Fuel Oil Adjustment	¢/kWh	7.299	\$151,001.7
Rate Adjustment (AES Refund)	%	-0.406%	(\$847.6)
TOTAL REVENUE			\$358,924.9
INTERIM RATE INCREASE REVENUES			\$13,361.3
TOTAL REVENUE AT CURRENT EFFECTIVE RATES			\$372,286.2

** INCLUDES Schedule E Adjustment, Service Voltage Adjustments, Power Factor Adjustment, Network Adjustment, TOU-C Option 2 Adjustment, and Rider Adjustments.

HAWAIIAN ELECTRIC COMPANY, INC.
Docket No. 2006-0386, Test-Year 2007
Schedule J - General Service Demand

Determination of Billing Loads By Service Phase

	MWH SALES		NO. OF BILLS	
	SALES (MWH)	PERCENT OF TOTAL	NUMBER OF BILLS	PERCENT OF TOTAL
<u>RECORDED:</u>				
1 PHASE	58,636.1	2.93	6,436	8.18
3 PHASE	1,941,395.1	97.07	72,287	91.82
TOTAL	2,000,031.2	100.00	78,723	100.00
	PERCENT OF TOTAL	SALES (MWH)	PERCENT OF TOTAL	NUMBER OF BILLS
<u>FORECAST:</u>				
1 PHASE	2.93	60,616	8.18	6,621
3 PHASE	97.07	2,008,184	91.82	74,319
TOTAL	100.00	2,068,800	100.00	80,940

HAWAIIAN ELECTRIC COMPANY, INC.
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Determination of TY Billing Loads For TP Voltage Service

	AT PRESENT RATES	
	Recorded	Forecast
<u>Sales (MWH):</u>		
TOTAL SCHEDULE J:	2,000,031.2	2,068,800
TP Voltage Service	11,554.8	11,999
PERCENT OF TOTAL	0.58	
<u>Number Of Bills:</u>		
TOTAL SCHEDULE J:	78,723	80,940
TP Voltage Service	18	16
PERCENT OF TOTAL	0.02	

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Determination of Billing Loads By Rate Block For TP Voltage Service

AT PRESENT RATES	SALES		NUMBER OF BILLS	
	MWH	% OF TOTAL	BILLS	% OF TOTAL
<u>RECORDED:</u>				
0 - 200 KWH/KW	10,370.7	89.75	17	94.44
201 - 400 KWH/KW	1,184.1	10.25	1	5.56
> 400 KWH/KW	-	0.00	-	0.00
TOTAL	11,554.8	100.00	18	100.00

FORECAST AT PRESENT RATES:

	% OF TOTAL	MWH	% OF TOTAL	NO. OF BILLS
0 - 200 KWH/KW	89.75	10,769	94.44	15
201 - 400 KWH/KW	10.25	1,230	5.56	1
> 400 KWH/KW	0.00	0	0.00	-
TOTAL	100.00	11,999	100.00	16

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Determination of Billing Loads By Rate Block For TP Voltage Service

At Present Rates

	RECORDED		KW FORECAST	
	KW	KWH/KW	PRESENT	PROPOSED
<u>LOAD FACTOR BLOCKS:</u>				
0 - 200 KWH/KW	250,148.2	41.46	259,744	259,744
201 - 400 KWH/KW	4,995.8	237.02	5,189	5,189
> 400 KWH/KW	0.0	0.00	0	0
TOTAL	255,144.0	45.29	264,933	264,933

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Determination of Billing Loads By Rate Block For TP Voltage Service

AT PRESENT RATES				
LOAD FACTOR BLOCK (KWH/KW)				
	0 - 200	201 - 400	> 400	TOTAL
<u>LOAD FACTOR BLOCK:</u>				
0 - 200 KWH/KW	10,769	1,038	0	11,807
201 - 400 KWH/KW	0	192	0	192
> 400 KWH/KW	0	0	0	0
TOTAL	10,769	1,230	0	11,999
<u>FORECAST AT PRESENT RATES:</u>				
SALES-MWH	10,769	1,230	0	11,999
BILLS	15	1	0	16
KW, BILLED	259,744	5,189	0	264,933

HAWAIIAN ELECTRIC COMPANY, INC.
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Determination of TY Revenues For TP Voltage Service

PRESENT RATES			
	BILLING UNITS	UNIT PRICE	REVENUES \$000s
<u>ENERGY CHARGE:</u>	<u>MWH</u>	<u>¢/kWh</u>	
0 - 200 KWH/KW	11,807	8.6900	\$1,026.0
201 - 400 KWH/KW	192	7.5419	\$14.5
> 400 KWH/KW	-	6.5130	\$0.0
TOTAL	11,999		\$1,040.5
<u>DEMAND CHARGE:</u>	<u>kW</u>	<u>\$/KW</u>	
	264,933	5.75	\$1,523.4
TOTAL			\$2,563.9
		<u>% ADJ.</u>	
TP Voltage Adj		-3.3	(\$84.6)

HAWAIIAN ELECTRIC COMPANY, INC.
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Determination of TY Billing Loads For TS Voltage Service

	AT PRESENT RATES	
	Recorded	Forecast
<u>Sales (MWH):</u>		
TOTAL SCHEDULE J:	2,000,031.2	2,068,800
TS Voltage Service	764.4	828
PERCENT OF TOTAL	0.04	
<u>Number Of Bills:</u>		
TOTAL SCHEDULE J:	78,723	80,940
TS Voltage Service	14	16
PERCENT OF TOTAL	0.02	

HAWAIIAN ELECTRIC COMPANY, INC.
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Determination of Billing Loads By Rate Block For TS Voltage Service

AT PRESENT RATES	SALES		NUMBER OF BILLS	
	MWH	% OF TOTAL	BILLS	% OF TOTAL
<u>RECORDED:</u>				
0 - 200 KWH/KW	585.4	76.58	9	64.29
201 - 400 KWH/KW	18.5	2.42	2	14.29
> 400 KWH/KW	160.5	21.00	3	21.42
TOTAL	764.4	100.00	14	100.00

FORECAST AT PRESENT RATES:

	% OF TOTAL	MWH	% OF TOTAL	NO. OF BILLS
0 - 200 KWH/KW	76.58	634	64.29	10
201 - 400 KWH/KW	2.42	20	14.29	2
> 400 KWH/KW	21.00	174	21.42	4
TOTAL	100.00	828	100.00	16

HAWAIIAN ELECTRIC COMPANY, INC.
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Determination of Billing Loads By Rate Block For TS Voltage Service

AT PRESENT RATES	RECORDED		KW FORECAST	
	KW	KWH/KW	PRESENT	PROPOSED
<u>LOAD FACTOR BLOCKS:</u>				
0 - 200 KWH/KW	18,204.7	32.16	19,714	4,820
201 - 400 KWH/KW	51.2	361.33	55	42
> 400 KWH/KW	72.5	2,213.79	79	297
TOTAL	18,328.4	41.71	19,848	5,159

HAWAIIAN ELECTRIC COMPANY, INC.
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Determination of Billing Loads By Rate Block For TS Voltage Service

AT PRESENT RATES				
LOAD FACTOR BLOCK (KWH/KW)				
	0 - 200	201 - 400	> 400	TOTAL
<u>LOAD FACTOR BLOCK:</u>				
0 - 200 KWH/KW	634	11	16	661
201 - 400 KWH/KW	0	9	16	25
> 400 KWH/KW	0	0	142	142
TOTAL	634	20	174	828
<u>FORECAST AT PRESENT RATES:</u>				
SALES-MWH	634	20	174	828
BILLS	10	2	4	16
KW, BILLED	19,714	55	79	19,848

HAWAIIAN ELECTRIC COMPANY, INC.
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Determination of TY Revenues For TS Voltage Service

PRESENT RATES			
	BILLING UNITS	UNIT PRICE	REVENUES \$000s
<u>ENERGY CHARGE:</u>	<u>MWH</u>	<u>¢/kWh</u>	
0 - 200 KWH/KW	661	8.6900	\$57.4
201 - 400 KWH/KW	25	7.5419	\$1.9
> 400 KWH/KW	142	6.5130	\$9.2
TOTAL	<u>828</u>		<u>\$68.5</u>
<u>DEMAND CHARGE:</u>	<u>kW</u>	<u>\$/KW</u>	
	19,848	5.75	\$114.1
TOTAL			<u>\$182.6</u>
		<u>% ADJ.</u>	
TS Voltage Adj		-2.4	(\$4.4)

HAWAIIAN ELECTRIC COMPANY, INC.
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Determination of TY Billing Loads For Primary Voltage Service

	AT PRESENT RATES	
	Recorded	Forecast
<u>Sales (MWH):</u>		
TOTAL SCHEDULE J:	2,000,031.2	2,068,800
Primary Voltage Service	199,860.2	206,673
PERCENT OF TOTAL	9.99	
<u>Number Of Bills:</u>		
TOTAL SCHEDULE J:	78,723	80,940
Primary Voltage Service	1,500	1,546
PERCENT OF TOTAL	1.91	

HAWAIIAN ELECTRIC COMPANY, INC.
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Determination of Billing Loads By Rate Block For Primary Voltage Service

AT PRESENT RATES	SALES		NUMBER OF BILLS	
	MWH	% OF TOTAL	BILLS	% OF TOTAL
<u>RECORDED:</u>				
0 - 200 KWH/KW	31,917.3	15.97	229	15.27
201 - 400 KWH/KW	101,313.8	50.69	771	51.40
> 400 KWH/KW	66,629.1	33.34	500	33.33
TOTAL	199,860.2	100.00	1,500	100.00

FORECAST AT PRESENT RATES:

	% OF TOTAL	MWH	% OF TOTAL	NO. OF BILLS
0 - 200 KWH/KW	15.97	33,006	15.27	236
201 - 400 KWH/KW	50.69	104,763	51.40	795
> 400 KWH/KW	33.34	68,904	33.33	515
TOTAL	100.00	206,673	100.00	1,546

HAWAIIAN ELECTRIC COMPANY, INC.
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Determination of Billing Loads By Rate Block For Primary Voltage Service

	RECORDED		KW FORECAST	
	KW	KWH/KW	PRESENT	PROPOSED
<u>LOAD FACTOR BLOCKS:</u>				
0 - 200 KWH/KW	244,543.4	130.52	252,881	278,541
201 - 400 KWH/KW	338,600.7	299.21	350,132	364,556
> 400 KWH/KW	133,578.2	498.80	138,140	123,153
TOTAL	716,722.3	278.85	741,153	766,250

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Determination of Billing Loads By Rate Block For Primary Voltage Service

AT PRESENT RATES				
LOAD FACTOR BLOCK (KWH/KW)				
	0 - 200	201 - 400	> 400	TOTAL
<u>LOAD FACTOR BLOCK:</u>				
0 - 200 KWH/KW	33,006	70,026	27,628	130,660
201 - 400 KWH/KW	0	34,737	27,628	62,365
> 400 KWH/KW	0	0	13,648	13,648
TOTAL	33,006	104,763	68,904	206,673
<u>FORECAST AT PRESENT RATES:</u>				
SALES-MWH	33,006	104,763	68,904	206,673
BILLS	236	795	515	1,546
KW, BILLED	252,881	350,132	138,140	741,153

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Determination of TY Revenues For Primary Voltage Service

PRESENT RATES			
	BILLING UNITS	UNIT PRICE	REVENUES \$000s
<u>ENERGY CHARGE:</u>	<u>MWH</u>	<u>c/kWh</u>	
0 - 200 KWH/KW	130,660	8.6900	\$11,354.4
201 - 400 KWH/KW	62,365	7.5419	\$4,703.5
> 400 KWH/KW	13,648	6.5130	\$888.9
TOTAL	206,673		\$16,946.8
<u>DEMAND CHARGE:</u>	<u>kW</u>	<u>\$/KW</u>	
	741,153	5.75	\$4,261.6
TOTAL			\$21,208.4
		<u>% ADJ.</u>	
DP Voltage Adjustment		-1.9	(\$403.0)

HAWAIIAN ELECTRIC COMPANY, INC.
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tion of TY Billing Loads For Primary Voltage, Secondary Meteri

	AT PRESENT RATES	
	RECORDED	FORECAST
<u>SALES, MWH:</u>		
TOTAL J:	2,000,031.2	2,068,800
Secondary Metering Adj.	20,481.8	21,102
PERCENT OF TOTAL	1.02	
<u>NUMBER OF BILLS:</u>		
TOTAL J:	78,723	80,940
Secondary Metering Adj.	256	267
PERCENT OF TOTAL	0.33	

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Billing Loads By Rate Block For Primary Voltage, Secondary Metering Service

AT PRESENT RATES	SALES		NUMBER OF BILLS	
	MWH	% OF TOTAL	BILLS	% OF TOTAL
<u>RECORDED:</u>				
0 - 200 KWH/KW	601.2	2.94	19	7.42
201 - 400 KWH/KW	11,259.9	54.98	146	57.03
> 400 KWH/KW	8,620.7	42.09	91	35.55
TOTAL	20,481.8	100.01	256	100.00

FORECAST AT PRESENT RATES:

	% OF TOTAL	MWH	% OF TOTAL	BILLS
0 - 200 KWH/KW	2.94	620	7.42	20
201 - 400 KWH/KW	54.98	11,602	57.03	152
> 400 KWH/KW	42.09	8,880	35.55	95
TOTAL	100.01	21,102	100.00	267

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Determination of Billing Loads By Rate Block For Secondary Voltage Service

	RECORDED		FORECAST	
	KW	KWH/KW	PRESENT	PROPOSED
<u>LOAD FACTOR BLOCKS:</u>				
0 - 200 KWH/KW	3,873.1	155.22	3,994	5,150
201 - 400 KWH/KW	37,439.5	300.75	38,577	39,768
> 400 KWH/KW	17,019.4	506.52	17,531	16,287
TOTAL	58,332.0	351.12	60,102	61,205

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Determination of Billing Loads By Rate Block For Primary Voltage, Secondary Metering Service

	PRESENT RATES			
	LOAD FACTOR BLOCK (KWH/KW)			
	0 - 200	201 - 400	> 400	TOTAL
<u>LOAD FACTOR BLOCK:</u>				
0 - 200 KWH/KW	620	7,715	3,506	11,841
201 - 400 KWH/KW	0	3,887	3,506	7,393
> 400 KWH/KW	0	0	1,868	1,868
TOTAL	620	11,602	8,880	21,102

FORECAST AT PRESENT RATES:

SALES-MWH	620	11,602	8,880	21,102
BILLS	20	152	95	267
KW, BILLED	3,994	38,577	17,531	60,102

HAWAIIAN ELECTRIC COMPANY, INC.
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Determination of TY Revenues For Primary Voltage, Secondary Metering Service

PRESENT RATES			
	BILLING UNITS	UNIT PRICE	REVENUES \$000s
<u>ENERGY CHARGE:</u>	<u>MWH</u>	<u>c/kWh</u>	
0 - 200 KWH/KW	11,841	8.6900	\$1,029.0
201 - 400 KWH/KW	7,393	7.5419	\$557.6
> 400 KWH/KW	1,868	6.5130	\$121.7
TOTAL	21,102		\$1,708.3
<u>DEMAND CHARGE:</u>	<u>kW</u>	<u>\$/KW</u>	
	60,102	5.75	\$345.6
Energy & Demand			<u>\$2,053.9</u>
		<u>% Adj.</u>	
DS Voltage Adjustment		(0.7)	(\$14.4)

HAWAIIAN ELECTRIC COMPANY, INC.
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Determination of Billing Loads By Rate Block For Total J

AT PRESENT RATES	SALES		NUMBER OF BILLS	
	MWH	% OF TOTAL	BILLS	% OF TOTAL
<u>RECORDED:</u>				
0 - 200 KWH/KW	155,921.0	7.80	12,540.0	15.93
201 - 400 KWH/KW	944,310.2	47.21	45,831.0	58.22
> 400 KWH/KW	899,800.0	44.99	20,352.0	25.85
TOTAL	2,000,031.2	100.00	78,723	100.00
<u>FORECAST:</u>				
	% OF TOTAL	MWH	% OF TOTAL	BILLS
0 - 200 KWH/KW	7.80	161,366	15.93	12,894
201 - 200 KWH/KW	47.21	976,680	58.22	47,123
> 400 KWH/KW	44.99	930,754	25.85	20,923
TOTAL	100.00	2,068,800	100.00	80,940

HAWAIIAN ELECTRIC COMPANY, INC.
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Determination of Billing Loads By Rate Block For Total J

<u>LOAD FACTOR BLOCKS:</u>	<u>RECORDED</u>		<u>FORECAST</u>	
	<u>KW</u>	<u>KWH/KW</u>	<u>PRESENT</u>	<u>PROPOSED</u>
0 - 200 KWH/KW	1,376,872.3	113.24	1,424,991	1,614,709
201 - 400 KWH/KW	3,181,981.3	296.77	3,291,033	3,493,263
> 400 KWH/KW	1,830,419.2	491.58	1,893,393	1,767,535
TOTAL	6,389,272.8	313.03	6,609,417	6,875,507

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Determination of Billing Loads By Rate Block For Total J

<u>LOAD FACTOR BLOCK:</u>	<u>PRESENT RATES</u>			
	<u>LOAD FACTOR BLOCK (KWH/KW)</u>			
	<u>0 - 200</u>	<u>201 - 400</u>	<u>> 400</u>	<u>TOTAL</u>
0 - 200 KWH/KW	161,366	658,207	378,679	1,198,252
201 - 400 KWH/KW	0	318,473	378,679	697,152
> 400 KWH/KW	0	0	173,396	173,396
TOTAL	161,366	976,680	930,754	2,068,800

FORECAST AT PRESENT RATES:

SALES - MWH	161,366	976,680	930,754	2,068,800
BILLS	12,894	47,123	20,923	80,940
KW, BILLED	1,424,991	3,291,033	1,893,393	6,609,417

HAWAIIAN ELECTRIC COMPANY, INC.
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Estimate of PF Adjustment for kWm > 200 kW Customers

	Recorded
SALES (KWH)	738,022.526
KVARHR	376,134.367
POWER FACTOR (%)	89.0
FOR KWM > 200kW	<u>AT PRESENT RATES</u>
CALCULATED PF (%)	89.0
BASE PF (%)	85.0
DIFF.	<u>(4.0)</u>
ADJ. FOR EA. 1% DIFF.	0.001
PF ADJ RATE	-0.004
TOTAL DMD + ENGY CHRG	\$76,996.6
Power Factor Adjustment (\$000s)	(\$308.0)

HAWAIIAN ELECTRIC COMPANY, INC.
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Schedule J - General Service Demand

Estimate of Test Year Revenues

PRESENT RATES			
	BILLING UNITS	UNIT PRICE	REVENUES \$000s
<u>ENERGY CHARGE:</u>	<u>(MWh)</u>	<u>¢/kWh</u>	
0 - 200 KWH/KW	1,198,252	8.6900	\$104,128.1
201 - 400 KWH/KW	697,152	7.5419	\$52,578.5
> 400 KWH/KW	173,396	6.5130	\$11,293.3
TOTAL	2,068,800		\$167,999.9
<u>DEMAND CHARGE:</u>	<u>kW</u>	<u>\$/kW</u>	
ALL BILLING KW	6,609,417	5.75	\$38,004.1
<u>CUSTOMER CHARGE:</u>	<u>BILLS</u>	<u>\$/month</u>	
1 PHASE	6,621	35.00	\$231.7
3 PHASE	74,319	60.00	\$4,459.1
SUBTOTAL	80,940		\$4,690.8
ADJUSTMENTS:			
POWER FACTOR ADJ.			(\$308.0)
TP VOLT. ADJ.			(\$84.6)
TS VOLT. ADJ.			(\$4.4)
DP VOLT. ADJ.			(\$403.0)
DS VOLT. ADJ.			(\$14.4)
NETWORK ADJ.			\$0.0
Schedule E Adjustment			\$0.0
Schedule J - TOU Adjustment			
SUBTOTAL			(\$814.4)
UNADJUSTED BASE REVENUE			\$209,880.4
RATE RIDER & OTHER REVENUE ADJ.			
RIDER M(B)			(\$152.5)
RIDER I			(\$45.8)
RIDER T			(\$338.4)
MULTIPLE RIDERS			(\$247.5)
SCHEDULE U			(\$325.4)
Total Rate Rider & Other Revenue Adjustments			(\$1,109.6)
Total Base Revenue			\$208,770.8
Fuel Oil Adjustment	¢/kWh	7.299	\$151,001.7
Rate Adjustment (AES Refund)	%	-0.406%	(\$847.6)
TOTAL REVENUE			\$358,924.9

HAWAIIAN ELECTRIC COMPANY, INC.
SCHEDULE J - General Service Demand
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SUMMARY OF TEST-YEAR REVENUES ADJUSTMENTS
FOR RIDER SERVICE AT PRESENT RATES

<u>RIDER M(B)</u>	PRESENT (\$1000s)
Rider Mb J1	(\$10.6)
Rider Mb J2	(\$12.5)
Rider Mb J3	(\$12.4)
Rider Mb J4	(\$18.6)
Rider Mb J5	(\$7.1)
Rider Mb J6	(\$3.7)
Rider Mb J7	(\$11.2)
Rider Mb J8	(\$30.5)
Rider Mb J9	(\$13.5)
Rider Mb J10	(\$7.6)
Rider Mb J11	(\$24.8)
Total Rider Mb	(\$152.5)

<u>RIDER I</u>	PRESENT (\$1000s)
Rider I J1	(\$45.8)
Total Rider I	(\$45.8)

<u>RIDER T</u>	PRESENT (\$1000s)
Rider T J1	(\$61.0)
Rider T J2	(\$0.5)
Rider T J3	(\$3.0)
Rider T J4	(\$12.6)
Rider T J5	(\$3.9)
Rider T J6	(\$4.2)
Rider T J7	(\$34.8)
Rider T J8	(\$39.4)
Rider T J9	(\$1.4)
Rider T J10	(\$5.2)
Rider T J11	(\$0.9)
Rider T J12	(\$1.2)
Rider T J13	(\$5.9)
Rider T J14	(\$4.7)
Rider T J15	(\$10.2)
Rider T J16	(\$48.8)
Rider T J17	(\$32.7)
Rider T J18	(\$26.0)
Rider T J19	(\$25.9)
Rider T J20	(\$1.3)
Rider T J21	(\$0.6)
Rider T J22	(\$3.4)
Rider T J23	(\$1.8)
Rider T J24	(\$23.6)
Rider T J25	(\$46.9)
TOTAL	(\$338.4)

<u>MULTIPLE RIDERS</u>	PRESENT (\$1000s)
Rider Mbl J1	(\$247.5)
TOTAL	(\$247.5)

<u>SCHEDULE U</u>	PRESENT (\$1000s)
Sch U J1	(\$99.9)
Sch U J2	(\$32.2)
Sch U J3	(\$68.7)
Sch U J4	(\$124.6)
TOTAL	(\$325.4)

Hawaiian Electric Company, Inc.
Schedule J - General Service Demand
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Rider Mb J1

	<u>Billing Units @ Present Rates</u>		<u>Revenues @ Present Rates</u>	
	Sch. J	Rider M(b)	Sch. J	Rider M(b)
Billing Load Per Month:				
Curtailable Load		122.1		
Billing kW	123.2	31.6		
kWh Per Month	28,220	28,220		
On-Peak kWh		0		
Off-Peak kWh		0		
Power Factor	85	85		
<u>Energy Charge:</u>				
0 - 200 kWh/kW	24,640	6,320	\$2,141	\$549
201 - 400 kWh/kW	3,580	6,320	\$270	\$477
>400 kWh/kW	0	15,580	\$0	\$1,015
Subtotal	28,220	28,220	\$2,411	\$2,041
On-Peak Surcharge		0		\$0
Off-Peak Credit		0		\$0
Rider T Energy Charge Adjustment		0		\$0
<u>Demand Charge:</u>				
Total kWb	123.2	31.6	\$708	\$182
Customer Charge			\$60	\$60
Time-of-Day Metering Charge				\$10
Primary Voltage Service Discount			\$0	\$0
Power Factor Adjustment			\$0	\$0
Total Base Revenue Per Month			\$3,179	\$2,293
Fuel Oil Adjustment			\$0	\$0
Rate Adjustment (AES Refund)			\$0	\$0
IRP Adjustment			\$0	\$0
DSM Adjustment			\$0	\$0
Total Revenue Per Month			\$3,179	\$2,293
Total Revenue Per Year (\$000s)			\$38.1	\$27.5
Rider Adjustment (\$000s/Yr)				(\$10.6)

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Rider Mb J2

	<u>Billing Units @ Present Rates</u>		<u>Revenues @ Present Rates</u>	
	Sch. J	Rider M(b)	Sch. J	Rider M(b)
Billing Load Per Month:				
Curtailable Load		135.9		
Billing kW	173.8	71.9		
kWh Per Month	51,267	51,267		
On-Peak kWh		0		
Off-Peak kWh		0		
Power Factor	85	85		
<u>Energy Charge:</u>				
0 - 200 kWh/kW	34,760	14,380	\$3,021	\$1,250
201 - 400 kWh/kW	16,507	14,380	\$1,245	\$1,085
>400 kWh/kW	0	22,507	\$0	\$1,466
Subtotal	51,267	51,267	\$4,266	\$3,801
On-Peak Surcharge		0		\$0
Off-Peak Credit		0		\$0
Rider T Energy Charge Adjustment		0		\$0
<u>Demand Charge:</u>				
Total kWb	173.8	71.9	\$999	\$413
Customer Charge			\$60	\$60
Time-of-Day Metering Charge				\$10
Primary Voltage Service Discount			\$0	\$0
Power Factor Adjustment			\$0	\$0
Total Base Revenue Per Month			\$5,325	\$4,284
Fuel Oil Adjustment			\$0	\$0
Rate Adjustment (AES Refund)			\$0	\$0
IRP Adjustment			\$0	\$0
DSM Adjustment			\$0	\$0
Total Revenue Per Month			\$5,325	\$4,284
Total Revenue Per Year (\$000s)			\$63.9	\$51.4
Rider Adjustment (\$000s/Yr)				(\$12.5)

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Rider Mb J3

	<u>Billing Units @ Present Rates</u>		<u>Revenues @ Present Rates</u>	
	Sch. J3	Rider M(b)	Sch. J3	Rider M(b)
Billing Load Per Month:				
Curtailable Load		162.8		
Billing kW	314.4	192.3		
kWh Per Month	86,200	86,200		
On-Peak kWh		0		
Off-Peak kWh		0		
Power Factor	100	100		
<u>Energy Charge:</u>				
0 - 200 kWh/kW	62,880	38,460	\$5,464	\$3,342
201 - 400 kWh/kW	23,320	38,460	\$1,759	\$2,901
>400 kWh/kW	0	9,280	\$0	\$604
Subtotal	86,200	86,200	\$7,223	\$6,847
On-Peak Surcharge		0		\$0
Off-Peak Credit		0		\$0
Rider T Energy Charge Adjustment		0		\$0
<u>Demand Charge:</u>				
Total kWb	314.4	192.3	\$1,808	\$1,106
Customer Charge			\$60	\$60
Time-of-Day Metering Charge				\$10
Primary Voltage Service Discount			(\$172)	(\$151)
Power Factor Adjustment			(\$135)	(\$119)
Total Base Revenue Per Month			\$8,784	\$7,753
Fuel Oil Adjustment			\$0	\$0
Rate Adjustment (AES Refund)			\$0	\$0
IRP Adjustment			\$0	\$0
DSM Adjustment			\$0	\$0
Total Revenue Per Month			\$8,784	\$7,753
Total Revenue Per Year (\$000s)			\$105.4	\$93.0
Rider Adjustment (\$000s/Yr)				(\$12.4)

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Rider Mb J4

	<u>Billing Units @ Present Rates</u>		<u>Revenues @ Present Rates</u>	
	Sch. J3	Rider M(b)	Sch. J3	Rider M(b)
Billing Load Per Month:				
Curtailable Load		253.8		
Billing kW	409.1	218.7		
kWh Per Month	90,333	90,333		
On-Peak kWh		0		
Off-Peak kWh		0		
Power Factor	65	65		
<u>Energy Charge:</u>				
0 - 200 kWh/kW	81,820	43,740	\$7,110	\$3,801
201 - 400 kWh/kW	8,513	43,740	\$642	\$3,299
>400 kWh/kW	0	2,853	\$0	\$186
Subtotal	90,333	90,333	\$7,752	\$7,286
On-Peak Surcharge		0		\$0
Off-Peak Credit		0		\$0
Rider T Energy Charge Adjustment		0		\$0
<u>Demand Charge:</u>				
Total kWb	409.1	218.7	\$2,352	\$1,258
Customer Charge			\$60	\$60
Time-of-Day Metering Charge				\$10
Primary Voltage Service Discount			(\$192)	(\$162)
Power Factor Adjustment			\$202	\$171
Total Base Revenue Per Month			\$10,174	\$8,623
Fuel Oil Adjustment			\$0	\$0
Rate Adjustment (AES Refund)			\$0	\$0
IRP Adjustment			\$0	\$0
DSM Adjustment			\$0	\$0
Total Revenue Per Month			\$10,174	\$8,623
Total Revenue Per Year (\$000s)			\$122.1	\$103.5
Rider Adjustment (\$000s/Yr)				(\$18.6)

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Rider Mb J5

	<u>Billing Units @ Present Rates</u>		<u>Revenues @ Present Rates</u>	
	Sch. J	Rider M(b)	Sch. J	Rider M(b)
Billing Load Per Month:				
Curtailable Load		75.3		
Billing kW	100.4	43.9		
kWh Per Month	32,013	32,013		
On-Peak kWh		0		
Off-Peak kWh		0		
Power Factor	85	85		
<u>Energy Charge:</u>				
0 - 200 kWh/kW	20,080	8,780	\$1,745	\$763
201 - 400 kWh/kW	11,933	8,780	\$900	\$662
>400 kWh/kW	0	14,453	\$0	\$941
Subtotal	32,013	32,013	\$2,645	\$2,366
On-Peak Surcharge		0		\$0
Off-Peak Credit		0		\$0
Rider T Energy Charge Adjustment		0		\$0
<u>Demand Charge:</u>				
Total kWb	100.4	43.9	\$577	\$252
Customer Charge			\$60	\$60
Time-of-Day Metering Charge				\$10
Primary Voltage Service Discount			\$0	\$0
Power Factor Adjustment			\$0	\$0
Total Base Revenue Per Month			\$3,282	\$2,688
Fuel Oil Adjustment			\$0	\$0
Rate Adjustment (AES Refund)			\$0	\$0
IRP Adjustment			\$0	\$0
DSM Adjustment			\$0	\$0
Total Revenue Per Month			\$3,282	\$2,688
Total Revenue Per Year (\$000s)			\$39.4	\$32.3
Rider Adjustment (\$000s/Yr)				(\$7.1)

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Rider Mb J6

	<u>Billing Units @ Present Rates</u>		<u>Revenues @ Present Rates</u>	
	Sch. J	Rider M(b)	Sch. J	Rider M(b)
Billing Load Per Month:				
Curtailable Load		52.3		
Billing kW	129.3	90.1		
kWh Per Month	27,687	27,687		
On-Peak kWh		0		
Off-Peak kWh		0		
Power Factor	85	85		
<u>Energy Charge:</u>				
0 - 200 kWh/kW	25,860	18,020	\$2,247	\$1,566
201 - 400 kWh/kW	1,827	9,667	\$138	\$729
>400 kWh/kW	0	0	\$0	\$0
Subtotal	27,687	27,687	\$2,385	\$2,295
On-Peak Surcharge		0		\$0
Off-Peak Credit		0		\$0
Rider T Energy Charge Adjustment		0		\$0
<u>Demand Charge:</u>				
Total kWb	129.3	90.1	\$743	\$518
Customer Charge			\$60	\$60
Time-of-Day Metering Charge				\$10
Primary Voltage Service Discount			\$0	\$0
Power Factor Adjustment			\$0	\$0
Total Base Revenue Per Month			\$3,188	\$2,883
Fuel Oil Adjustment			\$0	\$0
Rate Adjustment (AES Refund)			\$0	\$0
IRP Adjustment			\$0	\$0
DSM Adjustment			\$0	\$0
Total Revenue Per Month			\$3,188	\$2,883
Total Revenue Per Year (\$000s)			\$38.3	\$34.6
Rider Adjustment (\$000s/Yr)				(\$3.7)

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Rider Mb J7

	<u>Billing Units @ Present Rates</u>		<u>Revenues @ Present Rates</u>	
	Sch. J4	Rider M(b)	Sch. J4	Rider M(b)
Billing Load Per Month:				
Curtailable Load		145.2		
Billing kW	492.0	383.1		
kWh Per Month	162,200	162,200		
On-Peak kWh		0		
Off-Peak kWh		0		
Power Factor	99	99		
<u>Energy Charge:</u>				
0 - 200 kWh/kW	98,400	76,620	\$8,551	\$6,658
201 - 400 kWh/kW	63,800	76,620	\$4,812	\$5,779
>400 kWh/kW	0	8,960	\$0	\$584
Subtotal	162,200	162,200	\$13,363	\$13,021
On-Peak Surcharge		0		\$0
Off-Peak Credit		0		\$0
Rider T Energy Charge Adjustment		0		\$0
<u>Demand Charge:</u>				
Total kWb	492.0	383.1	\$2,829	\$2,203
Customer Charge			\$60	\$60
Time-of-Day Metering Charge				\$10
Primary Voltage Service Discount			(\$113)	(\$107)
Power Factor Adjustment			(\$227)	(\$213)
Total Base Revenue Per Month			\$15,912	\$14,974
Fuel Oil Adjustment			\$0	\$0
Rate Adjustment (AES Refund)			\$0	\$0
IRP Adjustment			\$0	\$0
DSM Adjustment			\$0	\$0
Total Revenue Per Month			\$15,912	\$14,974
Total Revenue Per Year (\$000s)			\$190.9	\$179.7
Rider Adjustment (\$000s/Yr)				(\$11.2)

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Rider Mb J8

	<u>Billing Units @ Present Rates</u>		<u>Revenues @ Present Rates</u>	
	Sch. J	Rider M(b)	Sch. J	Rider M(b)
Billing Load Per Month:				
Curtailable Load		307.9		
Billing kW	494.9	264.0		
kWh Per Month	173,100	173,100		
On-Peak kWh		0		
Off-Peak kWh		0		
Power Factor	88	88		
<u>Energy Charge:</u>				
0 - 200 kWh/kW	98,980	52,800	\$8,601	\$4,588
201 - 400 kWh/kW	74,120	52,800	\$5,590	\$3,982
>400 kWh/kW	0	67,500	\$0	\$4,396
Subtotal	173,100	173,100	\$14,191	\$12,966
On-Peak Surcharge		0		\$0
Off-Peak Credit		0		\$0
Rider T Energy Charge Adjustment		0		\$0
<u>Demand Charge:</u>				
Total kWb	494.9	264.0	\$2,846	\$1,518
Customer Charge			\$60	\$60
Time-of-Day Metering Charge				\$10
Primary Voltage Service Discount			\$0	\$0
Power Factor Adjustment			(\$51)	(\$43)
Total Base Revenue Per Month			\$17,046	\$14,511
Fuel Oil Adjustment			\$0	\$0
Rate Adjustment (AES Refund)			\$0	\$0
IRP Adjustment			\$0	\$0
DSM Adjustment			\$0	\$0
Total Revenue Per Month			\$17,046	\$14,511
Total Revenue Per Year (\$000s)			\$204.6	\$174.1
Rider Adjustment (\$000s/Yr)				(\$30.5)

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Rider Mb J9

	<u>Billing Units @ Present Rates</u>		<u>Revenues @ Present Rates</u>	
	Sch. J	Rider M(b)	Sch. J	Rider M(b)
Billing Load Per Month:				
Curtable Load		155.3		
Billing kW	421.9	305.4		
kWh Per Month	140,960	140,960		
On-Peak kWh		0		
Off-Peak kWh		0		
Power Factor	84	84		
<u>Energy Charge:</u>				
0 - 200 kWh/kW	84,380	61,080	\$7,333	\$5,308
201 - 400 kWh/kW	56,580	61,080	\$4,267	\$4,607
>400 kWh/kW	0	18,800	\$0	\$1,224
Subtotal	140,960	140,960	\$11,600	\$11,139
On-Peak Surcharge		0		\$0
Off-Peak Credit		0		\$0
Rider T Energy Charge Adjustment		0		\$0
<u>Demand Charge:</u>				
Total kWb	421.9	305.4	\$2,426	\$1,756
Customer Charge			\$60	\$60
Time-of-Day Metering Charge				\$10
Primary Voltage Service Discount			\$0	\$0
Power Factor Adjustment			\$14	\$13
Total Base Revenue Per Month			\$14,100	\$12,978
Fuel Oil Adjustment			\$0	\$0
Rate Adjustment (AES Refund)			\$0	\$0
IRP Adjustment			\$0	\$0
DSM Adjustment			\$0	\$0
Total Revenue Per Month			\$14,100	\$12,978
Total Revenue Per Year (\$000s)			\$169.2	\$155.7
Rider Adjustment (\$000s/Yr)				(\$13.5)

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Rider Mb J10

	<u>Billing Units @ Present Rates</u>		<u>Revenues @ Present Rates</u>	
	Sch. J	Rider M(b)	Sch. J	Rider M(b)
Billing Load Per Month:				
Curtailable Load		106.0		
Billing kW	199.7	120.2		
kWh Per Month	44,973	44,973		
On-Peak kWh		0		
Off-Peak kWh		0		
Power Factor	85	85		
<u>Energy Charge:</u>				
0 - 200 kWh/kW	39,940	24,040	\$3,471	\$2,089
201 - 400 kWh/kW	5,033	20,933	\$380	\$1,579
>400 kWh/kW	0	0	\$0	\$0
Subtotal	44,973	44,973	\$3,851	\$3,668
On-Peak Surcharge		0		\$0
Off-Peak Credit		0		\$0
Rider T Energy Charge Adjustment		0		\$0
<u>Demand Charge:</u>				
Total kWb	199.7	120.2	\$1,148	\$691
Customer Charge			\$60	\$60
Time-of-Day Metering Charge				\$10
Primary Voltage Service Discount			\$0	\$0
Power Factor Adjustment			\$0	\$0
Total Base Revenue Per Month			\$5,059	\$4,429
Fuel Oil Adjustment			\$0	\$0
Rate Adjustment (AES Refund)			\$0	\$0
IRP Adjustment			\$0	\$0
DSM Adjustment			\$0	\$0
Total Revenue Per Month			\$5,059	\$4,429
Total Revenue Per Year (\$000s)			\$60.7	\$53.1
Rider Adjustment (\$000s/Yr)				(\$7.6)

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Rider Mb J11

	<u>Billing Units @ Present Rates</u>		<u>Revenues @ Present Rates</u>	
	Sch. J	Rider M(b)	Sch. J	Rider M(b)
Billing Load Per Month:				
Curtailable Load		230.3		
Billing kW	370.5	197.8		
kWh Per Month	204,300	204,300		
On-Peak kWh		0		
Off-Peak kWh		0		
Power Factor	96	96		
<u>Energy Charge:</u>				
0 - 200 kWh/kW	74,100	39,560	\$6,439	\$3,438
201 - 400 kWh/kW	74,100	39,560	\$5,589	\$2,984
>400 kWh/kW	56,100	125,180	\$3,654	\$8,153
Subtotal	204,300	204,300	\$15,682	\$14,575
On-Peak Surcharge		0		\$0
Off-Peak Credit		0		\$0
Rider T Energy Charge Adjustment		0		\$0
<u>Demand Charge:</u>				
Total kWb	370.5	197.8	\$2,130	\$1,137
Customer Charge			\$60	\$60
Time-of-Day Metering Charge				\$10
Primary Voltage Service Discount			\$0	\$0
Power Factor Adjustment			(\$196)	(\$173)
Total Base Revenue Per Month			\$17,676	\$15,609
Fuel Oil Adjustment			\$0	\$0
Rate Adjustment (AES Refund)			\$0	\$0
IRP Adjustment			\$0	\$0
DSM Adjustment			\$0	\$0
Total Revenue Per Month			\$17,676	\$15,609
Total Revenue Per Year (\$000s)			\$212.1	\$187.3
Rider Adjustment (\$000s/Yr)				(\$24.8)

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Rider I J1

	<u>Billing Units @ Present Rates</u>		<u>Revenues @ Present Rates</u>	
	Sch. J3	Rider I	Sch. J3	Rider I
Billing Load Per Month:				
Curtailable Load		0.0		
Billing kW	2,248.9	1,574.2	interruptible=2350	
kWh Per Month	297,500	297,500		
On-Peak kWh		0		
Off-Peak kWh		0		
Power Factor	84	84		
<u>Energy Charge:</u>				
0 - 200 kWh/kW	297,500	297,500	\$25,853	\$25,853
201 - 400 kWh/kW	0	0	\$0	\$0
>400 kWh/kW	0	0	\$0	\$0
Subtotal	297,500	297,500	\$25,853	\$25,853
On-Peak Surcharge		0		\$0
Off-Peak Credit		0		\$0
Rider T Energy Charge Adjustment		0		\$0
<u>Demand Charge:</u>				
Total kWb	2,248.9	1,574.2	\$12,931	\$9,052
Customer Charge			\$60	\$60
Time-of-Day Metering Charge				
Primary Voltage Service Discount			(\$737)	(\$663)
Power Factor Adjustment			\$39	\$35
Total Base Revenue Per Month			\$38,146	\$34,337
Fuel Oil Adjustment			\$0	\$0
Rate Adjustment (AES Refund)			\$0	\$0
IRP Adjustment			\$0	\$0
DSM Adjustment			\$0	\$0
Total Revenue Per Month			\$38,146	\$34,337
Total Revenue Per Year (\$000s)			\$457.8	\$412.0
Rider Adjustment (\$000s/Yr)				(\$45.8)

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Rider T J1

	<u>Billing Units @ Present Rates</u>		<u>Revenues @ Present Rates</u>	
	Sch. J3	Rider T	Sch. J3	Rider T
Billing Load Per Month:				
Curtailable Load				
Billing kW	5,649.1	5,190.8		
kWh Per Month	1,247,195	1,247,195		
On-Peak kWh		718,799		
Off-Peak kWh		528,396		
Power Factor	85	85		
<u>Energy Charge:</u>				
0 - 200 kWh/kW	1,129,820	1,038,160	\$98,181	\$90,216
201 - 400 kWh/kW	117,375	209,035	\$8,852	\$15,765
>400 kWh/kW	0	0	\$0	\$0
Subtotal	1,247,195	1,247,195	\$107,033	\$105,981
On-Peak Surcharge		718,799		\$14,376
Off-Peak Credit		528,396		(\$15,852)
Rider T Energy Charge Adjustment		1,247,195		(\$1,476)
<u>Demand Charge:</u>				
Total kWb	5,649.1	5,190.8	\$32,482	\$29,847
Customer Charge			\$60	\$60
Time-of-Day Metering Charge				\$10
Primary Voltage Service Discount			(\$2,651)	(\$2,581)
Power Factor Adjustment			\$0	\$0
Total Base Revenue Per Month			\$136,924	\$131,841
Fuel Oil Adjustment			\$0	\$0
Rate Adjustment (AES Refund)			\$0	\$0
IRP Adjustment			\$0	\$0
DSM Adjustment			\$0	\$0
Total Revenue Per Month			\$136,924	\$131,841
Total Revenue Per Year (\$000s)			\$1,643.1	\$1,582.1
Rider Adjustment (\$000s/Yr)				(\$61.0)

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Rider T J2

	<u>Billing Units @ Present Rates</u>		<u>Revenues @ Present Rates</u>	
	Sch. J	Rider T	Sch. J	Rider T
Billing Load Per Month:				
Curtaillable Load				
Billing kW	37.6	37.6		
kWh Per Month	2,440	2,440		
On-Peak kWh		573		
Off-Peak kWh		1,867		
Power Factor	85	85		
<u>Energy Charge:</u>				
0 - 200 kWh/kW	2,440	2,440	\$212	\$212
201 - 400 kWh/kW	0	0	\$0	\$0
>400 kWh/kW	0	0	\$0	\$0
Subtotal	2,440	2,440	\$212	\$212
On-Peak Surcharge		573		\$11
Off-Peak Credit		1,867		(\$56)
Rider T Energy Charge Adjustment		2,440		(\$45)
<u>Demand Charge:</u>				
Total kWb	37.6	37.6	\$216	\$216
Customer Charge			\$60	\$60
Time-of-Day Metering Charge				\$10
Primary Voltage Service Discount			\$0	\$0
Power Factor Adjustment			\$0	\$0
Total Base Revenue Per Month			\$488	\$453
Fuel Oil Adjustment			\$0	\$0
Rate Adjustment (AES Refund)			\$0	\$0
IRP Adjustment			\$0	\$0
DSM Adjustment			\$0	\$0
Total Revenue Per Month			\$488	\$453
Total Revenue Per Year (\$000s)			\$5.9	\$5.4
Rider Adjustment (\$000s/Yr)				(\$0.5)

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Rider T J3

	<u>Billing Units @ Present Rates</u>		<u>Revenues @ Present Rates</u>	
	Sch. J	Rider T	Sch. J	Rider T
Billing Load Per Month:				
Curtailable Load				
Billing kW	116.8	116.8		
kWh Per Month	54,440	54,440		
On-Peak kWh		27,360		
Off-Peak kWh		27,080		
Power Factor	85	85		
<u>Energy Charge:</u>				
0 - 200 kWh/kW	23,360	23,360	\$2,030	\$2,030
201 - 400 kWh/kW	23,360	23,360	\$1,762	\$1,762
>400 kWh/kW	7,720	7,720	\$503	\$503
Subtotal	54,440	54,440	\$4,295	\$4,295
On-Peak Surcharge		27,360		\$547
Off-Peak Credit		27,080		(\$812)
Rider T Energy Charge Adjustment		54,440		(\$265)
<u>Demand Charge:</u>				
Total kWb	116.8	116.8	\$672	\$672
Customer Charge			\$60	\$60
Time-of-Day Metering Charge				\$10
Primary Voltage Service Discount			\$0	\$0
Power Factor Adjustment			\$0	\$0
Total Base Revenue Per Month			\$5,027	\$4,772
Fuel Oil Adjustment			\$0	\$0
Rate Adjustment (AES Refund)			\$0	\$0
IRP Adjustment			\$0	\$0
DSM Adjustment			\$0	\$0
Total Revenue Per Month			\$5,027	\$4,772
Total Revenue Per Year (\$000s)			\$60.3	\$57.3
Rider Adjustment (\$000s/Yr)				(\$3.0)

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Rider T J4

	<u>Billing Units @ Present Rates</u>		<u>Revenues @ Present Rates</u>	
	Sch. J	Rider T	Sch. J	Rider T
Billing Load Per Month:				
Curtailable Load				
Billing kW	291.4	291.4		
kWh Per Month	77,527	77,527		
On-Peak kWh		25,340		
Off-Peak kWh		52,187		
Power Factor	88	88		
<u>Energy Charge:</u>				
0 - 200 kWh/kW	58,280	58,280	\$5,065	\$5,065
201 - 400 kWh/kW	19,247	19,247	\$1,452	\$1,452
>400 kWh/kW	0	0	\$0	\$0
Subtotal	77,527	77,527	\$6,517	\$6,517
On-Peak Surcharge		25,340		\$507
Off-Peak Credit		52,187		(\$1,566)
Rider T Energy Charge Adjustment		77,527		(\$1,059)
<u>Demand Charge:</u>				
Total kWb	291.4	291.4	\$1,676	\$1,676
Customer Charge			\$60	\$60
Time-of-Day Metering Charge				\$10
Primary Voltage Service Discount			\$0	\$0
Power Factor Adjustment			(\$25)	(\$25)
Total Base Revenue Per Month			\$8,228	\$7,179
Fuel Oil Adjustment			\$0	\$0
Rate Adjustment (AES Refund)			\$0	\$0
IRP Adjustment			\$0	\$0
DSM Adjustment			\$0	\$0
Total Revenue Per Month			\$8,228	\$7,179
Total Revenue Per Year (\$000s)			\$98.7	\$86.1
Rider Adjustment (\$000s/Yr)				(\$12.6)

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Rider T J5

	<u>Billing Units @ Present Rates</u>		<u>Revenues @ Present Rates</u>	
	Sch. J	Rider T	Sch. J	Rider T
Billing Load Per Month:				
Curtailable Load				
Billing kW	404.2	403.9		
kWh Per Month	107,040	107,040		
On-Peak kWh		57,580		
Off-Peak kWh		49,460		
Power Factor	84	84		
<u>Energy Charge:</u>				
0 - 200 kWh/kW	80,840	80,780	\$7,025	\$7,020
201 - 400 kWh/kW	26,200	26,260	\$1,976	\$1,981
>400 kWh/kW	0	0	\$0	\$0
Subtotal	107,040	107,040	\$9,001	\$9,001
On-Peak Surcharge		57,580		\$1,152
Off-Peak Credit		49,460		(\$1,484)
Rider T Energy Charge Adjustment		107,040		(\$332)
<u>Demand Charge:</u>				
Total kWb	404.2	403.9	\$2,324	\$2,322
Customer Charge			\$60	\$60
Time-of-Day Metering Charge				\$10
Primary Voltage Service Discount			\$0	\$0
Power Factor Adjustment			\$11	\$11
Total Base Revenue Per Month			\$11,396	\$11,072
Fuel Oil Adjustment			\$0	\$0
Rate Adjustment (AES Refund)			\$0	\$0
IRP Adjustment			\$0	\$0
DSM Adjustment			\$0	\$0
Total Revenue Per Month			\$11,396	\$11,072
Total Revenue Per Year (\$000s)			\$136.8	\$132.9
Rider Adjustment (\$000s/Yr)				(\$3.9)

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Rider T J6

	<u>Billing Units @ Present Rates</u>		<u>Revenues @ Present Rates</u>	
	Sch. J	Rider T	Sch. J	Rider T
Billing Load Per Month:				
Curtailable Load				
Billing kW	193.9	193.9		
kWh Per Month	31,080	31,080		
On-Peak kWh		11,507		
Off-Peak kWh		19,573		
Power Factor	88	88		
<u>Energy Charge:</u>				
0 - 200 kWh/kW	31,080	31,080	\$2,701	\$2,701
201 - 400 kWh/kW	0	0	\$0	\$0
>400 kWh/kW	0	0	\$0	\$0
Subtotal	31,080	31,080	\$2,701	\$2,701
On-Peak Surcharge		11,507		\$230
Off-Peak Credit		19,573		(\$587)
Rider T Energy Charge Adjustment		31,080		(\$357)
<u>Demand Charge:</u>				
Total kWb	193.9	193.9	\$1,115	\$1,115
Customer Charge			\$60	\$60
Time-of-Day Metering Charge				\$10
Primary Voltage Service Discount			\$0	\$0
Power Factor Adjustment			(\$11)	(\$11)
Total Base Revenue Per Month			\$3,865	\$3,518
Fuel Oil Adjustment			\$0	\$0
Rate Adjustment (AES Refund)			\$0	\$0
IRP Adjustment			\$0	\$0
DSM Adjustment			\$0	\$0
Total Revenue Per Month			\$3,865	\$3,518
Total Revenue Per Year (\$000s)			\$46.4	\$42.2
Rider Adjustment (\$000s/Yr)				(\$4.2)

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Rider T J7

	<u>Billing Units @ Present Rates</u>		<u>Revenues @ Present Rates</u>	
	Sch. J	Rider T	Sch. J	Rider T
Billing Load Per Month:				
Curtailable Load				
Billing kW	539.1	25.0		
kWh Per Month	700	700		
On-Peak kWh		400		
Off-Peak kWh		300		
Power Factor	100	100		
<u>Energy Charge:</u>				
0 - 200 kWh/kW	700	700	\$61	\$61
201 - 400 kWh/kW	0	0	\$0	\$0
>400 kWh/kW	0	0	\$0	\$0
Subtotal	700	700	\$61	\$61
On-Peak Surcharge		400		\$8
Off-Peak Credit		300		(\$9)
Rider T Energy Charge Adjustment		700		(\$1)
<u>Demand Charge:</u>				
Total kWb	539.1	25.0	\$3,100	\$144
Customer Charge			\$60	\$60
Time-of-Day Metering Charge				\$10
Primary Voltage Service Discount			\$0	\$0
Power Factor Adjustment			(\$47)	(\$3)
Total Base Revenue Per Month			\$3,174	\$271
Fuel Oil Adjustment			\$0	\$0
Rate Adjustment (AES Refund)			\$0	\$0
IRP Adjustment			\$0	\$0
DSM Adjustment			\$0	\$0
Total Revenue Per Month			\$3,174	\$271
Total Revenue Per Year (\$000s)			\$38.1	\$3.3
Rider Adjustment (\$000s/Yr)				(\$34.8)

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Rider T J8

	<u>Billing Units @ Present Rates</u>		<u>Revenues @ Present Rates</u>	
	Sch. J	Rider T	Sch. J	Rider T
Billing Load Per Month:				
Curtailable Load				
Billing kW	598.8	25.0		
kWh Per Month	667	667		
On-Peak kWh		400		
Off-Peak kWh		267		
Power Factor	85	85		
<u>Energy Charge:</u>				
0 - 200 kWh/kW	667	667	\$58	\$58
201 - 400 kWh/kW	0	0	\$0	\$0
>400 kWh/kW	0	0	\$0	\$0
Subtotal	667	667	\$58	\$58
On-Peak Surcharge		400		\$8
Off-Peak Credit		267		(\$8)
Rider T Energy Charge Adjustment		667		\$0
<u>Demand Charge:</u>				
Total kWb	598.8	25.0	\$3,443	\$144
Customer Charge			\$60	\$60
Time-of-Day Metering Charge				\$10
Primary Voltage Service Discount			\$0	\$0
Power Factor Adjustment			\$0	\$0
Total Base Revenue Per Month			\$3,561	\$272
Fuel Oil Adjustment			\$0	\$0
Rate Adjustment (AES Refund)			\$0	\$0
IRP Adjustment			\$0	\$0
DSM Adjustment			\$0	\$0
Total Revenue Per Month			\$3,561	\$272
Total Revenue Per Year (\$000s)			\$42.7	\$3.3
Rider Adjustment (\$000s/Yr)				(\$39.4)

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Rider T J9

	<u>Billing Units @ Present Rates</u>		<u>Revenues @ Present Rates</u>	
	Sch. J	Rider T	Sch. J	Rider T
Billing Load Per Month:				
Curtailable Load				
Billing kW	126.7	126.6		
kWh Per Month	17,993	17,993		
On-Peak kWh		8,153		
Off-Peak kWh		9,840		
Power Factor	85	85		
<u>Energy Charge:</u>				
0 - 200 kWh/kW	17,993	17,993	\$1,564	\$1,564
201 - 400 kWh/kW	0	0	\$0	\$0
>400 kWh/kW	0	0	\$0	\$0
Subtotal	17,993	17,993	\$1,564	\$1,564
On-Peak Surcharge		8,153		\$163
Off-Peak Credit		9,840		(\$295)
Rider T Energy Charge Adjustment		17,993		(\$132)
<u>Demand Charge:</u>				
Total kWb	126.7	126.6	\$729	\$728
Customer Charge			\$60	\$60
Time-of-Day Metering Charge				\$10
Primary Voltage Service Discount			\$0	\$0
Power Factor Adjustment			\$0	\$0
Total Base Revenue Per Month			\$2,353	\$2,230
Fuel Oil Adjustment			\$0	\$0
Rate Adjustment (AES Refund)			\$0	\$0
IRP Adjustment			\$0	\$0
DSM Adjustment			\$0	\$0
Total Revenue Per Month			\$2,353	\$2,230
Total Revenue Per Year (\$000s)			\$28.2	\$26.8
Rider Adjustment (\$000s/Yr)				(\$1.4)

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Rider T J10

	<u>Billing Units @ Present Rates</u>		<u>Revenues @ Present Rates</u>	
	Sch. J	Rider T	Sch. J	Rider T
Billing Load Per Month:				
Curtailable Load				
Billing kW	187.7	164.8		
kWh Per Month	17,113	17,113		
On-Peak kWh		4,040		
Off-Peak kWh		13,073		
Power Factor	85	85		
<u>Energy Charge:</u>				
0 - 200 kWh/kW	17,113	17,113	\$1,487	\$1,487
201 - 400 kWh/kW	0	0	\$0	\$0
>400 kWh/kW	0	0	\$0	\$0
Subtotal	17,113	17,113	\$1,487	\$1,487
On-Peak Surcharge		4,040		\$81
Off-Peak Credit		13,073		(\$392)
Rider T Energy Charge Adjustment		17,113		(\$311)
<u>Demand Charge:</u>				
Total kWb	187.7	164.8	\$1,079	\$948
Customer Charge			\$60	\$60
Time-of-Day Metering Charge				\$10
Primary Voltage Service Discount			\$0	\$0
Power Factor Adjustment			\$0	\$0
Total Base Revenue Per Month			\$2,626	\$2,194
Fuel Oil Adjustment			\$0	\$0
Rate Adjustment (AES Refund)			\$0	\$0
IRP Adjustment			\$0	\$0
DSM Adjustment			\$0	\$0
Total Revenue Per Month			\$2,626	\$2,194
Total Revenue Per Year (\$000s)			\$31.5	\$26.3
Rider Adjustment (\$000s/Yr)				(\$5.2)

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Rider T J11

	<u>Billing Units @ Present Rates</u>		<u>Revenues @ Present Rates</u>	
	Sch. J	Rider T	Sch. J	Rider T
Billing Load Per Month:				
Curtailable Load				
Billing kW	38.1	38.1		
kWh Per Month	17,847	17,847		
On-Peak kWh		8,947		
Off-Peak kWh		8,900		
Power Factor	85	85		
<u>Energy Charge:</u>				
0 - 200 kWh/kW	7,620	7,620	\$662	\$662
201 - 400 kWh/kW	7,620	7,620	\$575	\$575
>400 kWh/kW	2,607	2,607	\$170	\$170
Subtotal	17,847	17,847	\$1,407	\$1,407
On-Peak Surcharge		8,947		\$179
Off-Peak Credit		8,900		(\$267)
Rider T Energy Charge Adjustment		17,847		(\$88)
<u>Demand Charge:</u>				
Total kWb	38.1	38.1	\$219	\$219
Customer Charge			\$60	\$60
Time-of-Day Metering Charge				\$10
Primary Voltage Service Discount			\$0	\$0
Power Factor Adjustment			\$0	\$0
Total Base Revenue Per Month			\$1,686	\$1,608
Fuel Oil Adjustment			\$0	\$0
Rate Adjustment (AES Refund)			\$0	\$0
IRP Adjustment			\$0	\$0
DSM Adjustment			\$0	\$0
Total Revenue Per Month			\$1,686	\$1,608
Total Revenue Per Year (\$000s)			\$20.2	\$19.3
Rider Adjustment (\$000s/Yr)				(\$0.9)

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Rider T J12

	<u>Billing Units @ Present Rates</u>		<u>Revenues @ Present Rates</u>	
	Sch. J	Rider T	Sch. J	Rider T
Billing Load Per Month:				
Curtailable Load				
Billing kW	60.0	60.0		
kWh Per Month	25,367	25,367		
On-Peak kWh		13,067		
Off-Peak kWh		12,300		
Power Factor	85	85		
<u>Energy Charge:</u>				
0 - 200 kWh/kW	12,000	12,000	\$1,043	\$1,043
201 - 400 kWh/kW	12,000	12,000	\$905	\$905
>400 kWh/kW	1,367	1,367	\$89	\$89
Subtotal	25,367	25,367	\$2,037	\$2,037
On-Peak Surcharge		13,067		\$261
Off-Peak Credit		12,300		(\$369)
Rider T Energy Charge Adjustment		25,367		(\$108)
<u>Demand Charge:</u>				
Total kWb	60.0	60.0	\$345	\$345
Customer Charge			\$60	\$60
Time-of-Day Metering Charge				\$10
Primary Voltage Service Discount			\$0	\$0
Power Factor Adjustment			\$0	\$0
Total Base Revenue Per Month			\$2,442	\$2,344
Fuel Oil Adjustment			\$0	\$0
Rate Adjustment (AES Refund)			\$0	\$0
IRP Adjustment			\$0	\$0
DSM Adjustment			\$0	\$0
Total Revenue Per Month			\$2,442	\$2,344
Total Revenue Per Year (\$000s)			\$29.3	\$28.1
Rider Adjustment (\$000s/Yr)				(\$1.2)

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Rider T J13

	<u>Billing Units @ Present Rates</u>		<u>Revenues @ Present Rates</u>	
	Sch. J	Rider T	Sch. J	Rider T
Billing Load Per Month:				
Curtailable Load				
Billing kW	75.6	25.0		
kWh Per Month	10,519	10,519		
On-Peak kWh		3,466		
Off-Peak kWh		7,053		
Power Factor	85	85		
<u>Energy Charge:</u>				
0 - 200 kWh/kW	10,519	5,000	\$914	\$435
201 - 400 kWh/kW	0	5,000	\$0	\$377
>400 kWh/kW	0	519	\$0	\$34
Subtotal	10,519	10,519	\$914	\$846
On-Peak Surcharge		3,466		\$69
Off-Peak Credit		7,053		(\$212)
Rider T Energy Charge Adjustment		10,519		(\$143)
<u>Demand Charge:</u>				
Total kWb	75.6	25.0	\$435	\$144
Customer Charge			\$60	\$60
Time-of-Day Metering Charge				\$10
Primary Voltage Service Discount			\$0	\$0
Power Factor Adjustment			\$0	\$0
Total Base Revenue Per Month			\$1,409	\$917
Fuel Oil Adjustment			\$0	\$0
Rate Adjustment (AES Refund)			\$0	\$0
IRP Adjustment			\$0	\$0
DSM Adjustment			\$0	\$0
Total Revenue Per Month			\$1,409	\$917
Total Revenue Per Year (\$000s)			\$16.9	\$11.0
Rider Adjustment (\$000s/Yr)				(\$5.9)

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Rider T J14

	<u>Billing Units @ Present Rates</u>		<u>Revenues @ Present Rates</u>	
	Sch. J	Rider T	Sch. J	Rider T
Billing Load Per Month:				
Curtailable Load				
Billing kW	60.8	25.0		
kWh Per Month	9,480	9,480		
On-Peak kWh		2,767		
Off-Peak kWh		6,713		
Power Factor	85	85		
<u>Energy Charge:</u>				
0 - 200 kWh/kW	9,480	5,000	\$824	\$435
201 - 400 kWh/kW	0	4,480	\$0	\$338
>400 kWh/kW	0	0	\$0	\$0
Subtotal	9,480	9,480	\$824	\$773
On-Peak Surcharge		2,767		\$55
Off-Peak Credit		6,713		(\$201)
Rider T Energy Charge Adjustment		9,480		(\$146)
<u>Demand Charge:</u>				
Total kWb	60.8	25.0	\$350	\$144
Customer Charge			\$60	\$60
Time-of-Day Metering Charge				\$10
Primary Voltage Service Discount			\$0	\$0
Power Factor Adjustment			\$0	\$0
Total Base Revenue Per Month			\$1,234	\$841
Fuel Oil Adjustment			\$0	\$0
Rate Adjustment (AES Refund)			\$0	\$0
IRP Adjustment			\$0	\$0
DSM Adjustment			\$0	\$0
Total Revenue Per Month			\$1,234	\$841
Total Revenue Per Year (\$000s)			\$14.8	\$10.1
Rider Adjustment (\$000s/Yr)				(\$4.7)

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Rider T J15

	<u>Billing Units @ Present Rates</u>		<u>Revenues @ Present Rates</u>	
	Sch. J	Rider T	Sch. J	Rider T
Billing Load Per Month:				
Curtailable Load				
Billing kW	197.1	102.4		
kWh Per Month	19,073	19,073		
On-Peak kWh		5,220		
Off-Peak kWh		13,853		
Power Factor	85	85		
<u>Energy Charge:</u>				
0 - 200 kWh/kW	19,073	19,073	\$1,657	\$1,657
201 - 400 kWh/kW	0	0	\$0	\$0
>400 kWh/kW	0	0	\$0	\$0
Subtotal	19,073	19,073	\$1,657	\$1,657
On-Peak Surcharge		5,220		\$104
Off-Peak Credit		13,853		(\$416)
Rider T Energy Charge Adjustment		19,073		(\$312)
<u>Demand Charge:</u>				
Total kWb	197.1	102.4	\$1,133	\$589
Customer Charge			\$60	\$60
Time-of-Day Metering Charge				\$10
Primary Voltage Service Discount			\$0	\$0
Power Factor Adjustment			\$0	\$0
Total Base Revenue Per Month			\$2,850	\$2,004
Fuel Oil Adjustment			\$0	\$0
Rate Adjustment (AES Refund)			\$0	\$0
IRP Adjustment			\$0	\$0
DSM Adjustment			\$0	\$0
Total Revenue Per Month			\$2,850	\$2,004
Total Revenue Per Year (\$000s)			\$34.2	\$24.0
Rider Adjustment (\$000s/Yr)				(\$10.2)

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Rider T J16

	<u>Billing Units @ Present Rates</u>		<u>Revenues @ Present Rates</u>	
	Sch. J	Rider T	Sch. J	Rider T
Billing Load Per Month:				
Curtailable Load				
Billing kW	242.8	25.0		
kWh Per Month	60,853	60,853		
On-Peak kWh		613		
Off-Peak kWh		60,240		
Power Factor	83	83		
<u>Energy Charge:</u>				
0 - 200 kWh/kW	48,560	5,000	\$4,220	\$435
201 - 400 kWh/kW	12,293	5,000	\$927	\$377
>400 kWh/kW	0	50,853	\$0	\$3,312
Subtotal	60,853	60,853	\$5,147	\$4,124
On-Peak Surcharge		613		\$12
Off-Peak Credit		60,240		(\$1,807)
Rider T Energy Charge Adjustment		60,853		(\$1,795)
<u>Demand Charge:</u>				
Total kWb	242.8	25.0	\$1,396	\$144
Customer Charge			\$60	\$60
Time-of-Day Metering Charge				\$10
Primary Voltage Service Discount			\$0	\$0
Power Factor Adjustment			\$13	\$9
Total Base Revenue Per Month			\$6,616	\$2,552
Fuel Oil Adjustment			\$0	\$0
Rate Adjustment (AES Refund)			\$0	\$0
IRP Adjustment			\$0	\$0
DSM Adjustment			\$0	\$0
Total Revenue Per Month			\$6,616	\$2,552
Total Revenue Per Year (\$000s)			\$79.4	\$30.6
Rider Adjustment (\$000s/Yr)				(\$48.8)

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Rider T J17

	<u>Billing Units @ Present Rates</u>		<u>Revenues @ Present Rates</u>	
	Sch. J	Rider T	Sch. J	Rider T
Billing Load Per Month:				
Curtailable Load				
Billing kW	208.7	25.0		
kWh Per Month	35,720	35,720		
On-Peak kWh		240		
Off-Peak kWh		35,480		
Power Factor	83	83		
<u>Energy Charge:</u>				
0 - 200 kWh/kW	35,720	5,000	\$3,104	\$435
201 - 400 kWh/kW	0	5,000	\$0	\$377
>400 kWh/kW	0	25,720	\$0	\$1,675
Subtotal	35,720	35,720	\$3,104	\$2,487
On-Peak Surcharge		240		\$5
Off-Peak Credit		35,480		(\$1,064)
Rider T Energy Charge Adjustment		35,720		(\$1,059)
<u>Demand Charge:</u>				
Total kWb	208.7	25.0	\$1,200	\$144
Customer Charge			\$60	\$60
Time-of-Day Metering Charge				\$10
Primary Voltage Service Discount			\$0	\$0
Power Factor Adjustment			\$9	\$5
Total Base Revenue Per Month			\$4,373	\$1,647
Fuel Oil Adjustment			\$0	\$0
Rate Adjustment (AES Refund)			\$0	\$0
IRP Adjustment			\$0	\$0
DSM Adjustment			\$0	\$0
Total Revenue Per Month			\$4,373	\$1,647
Total Revenue Per Year (\$000s)			\$52.5	\$19.8
Rider Adjustment (\$000s/Yr)				(\$32.7)

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Rider T J18

	<u>Billing Units @ Present Rates</u>		<u>Revenues @ Present Rates</u>	
	Sch. J	Rider T	Sch. J	Rider T
Billing Load Per Month:				
Curtailable Load				
Billing kW	211.1	25.0		
kWh Per Month	24,607	24,607		
On-Peak kWh		0		
Off-Peak kWh		24,607		
Power Factor	88	88		
<u>Energy Charge:</u>				
0 - 200 kWh/kW	24,607	5,000	\$2,138	\$435
201 - 400 kWh/kW	0	5,000	\$0	\$377
>400 kWh/kW	0	14,607	\$0	\$951
Subtotal	24,607	24,607	\$2,138	\$1,763
On-Peak Surcharge		0		\$0
Off-Peak Credit		24,607		(\$738)
Rider T Energy Charge Adjustment		24,607		(\$738)
<u>Demand Charge:</u>				
Total kWb	211.1	25.0	\$1,214	\$144
Customer Charge			\$60	\$60
Time-of-Day Metering Charge				\$10
Primary Voltage Service Discount			\$0	\$0
Power Factor Adjustment			(\$10)	(\$6)
Total Base Revenue Per Month			\$3,402	\$1,233
Fuel Oil Adjustment			\$0	\$0
Rate Adjustment (AES Refund)			\$0	\$0
IRP Adjustment			\$0	\$0
DSM Adjustment			\$0	\$0
Total Revenue Per Month			\$3,402	\$1,233
Total Revenue Per Year (\$000s)			\$40.8	\$14.8
Rider Adjustment (\$000s/Yr)				(\$26.0)

Hawaiian Electric Company, Inc.
Schedule J - General Service Demand
Docket No. 2006-0386, Test-Year 2007

Rider T J19

	<u>Billing Units @ Present Rates</u>		<u>Revenues @ Present Rates</u>	
	Sch. J	Rider T	Sch. J	Rider T
Billing Load Per Month:				
Curtailable Load				
Billing kW	181.0	25.3		
kWh Per Month	30,180	30,180		
On-Peak kWh		2,540		
Off-Peak kWh		27,640		
Power Factor	85	85		
<u>Energy Charge:</u>				
0 - 200 kWh/kW	30,180	5,060	\$2,623	\$440
201 - 400 kWh/kW	0	5,060	\$0	\$382
>400 kWh/kW	0	20,060	\$0	\$1,307
Subtotal	30,180	30,180	\$2,623	\$2,129
On-Peak Surcharge		2,540		\$51
Off-Peak Credit		27,640		(\$829)
Rider T Energy Charge Adjustment		30,180		(\$778)
<u>Demand Charge:</u>				
Total kWb	181.0	25.3	\$1,041	\$145
Customer Charge			\$60	\$60
Time-of-Day Metering Charge				\$10
Primary Voltage Service Discount			\$0	\$0
Power Factor Adjustment			\$0	\$0
Total Base Revenue Per Month			\$3,724	\$1,566
Fuel Oil Adjustment			\$0	\$0
Rate Adjustment (AES Refund)			\$0	\$0
IRP Adjustment			\$0	\$0
DSM Adjustment			\$0	\$0
Total Revenue Per Month			\$3,724	\$1,566
Total Revenue Per Year (\$000s)			\$44.7	\$18.8
Rider Adjustment (\$000s/Yr)				(\$25.9)

Hawaiian Electric Company, Inc.
Schedule J - General Service Demand
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Rider T J20

	<u>Billing Units @ Present Rates</u>		<u>Revenues @ Present Rates</u>	
	Sch. J	Rider T	Sch. J	Rider T
Billing Load Per Month:				
Curtailable Load				
Billing kW	34.1	34.1		
kWh Per Month	15,587	15,587		
On-Peak kWh		7,067		
Off-Peak kWh		8,520		
Power Factor	85	85		
<u>Energy Charge:</u>				
0 - 200 kWh/kW	6,820	6,820	\$593	\$593
201 - 400 kWh/kW	6,820	6,820	\$514	\$514
>400 kWh/kW	1,947	1,947	\$127	\$127
Subtotal	15,587	15,587	\$1,234	\$1,234
On-Peak Surcharge		7,067		\$141
Off-Peak Credit		8,520		(\$256)
Rider T Energy Charge Adjustment		15,587		(\$115)
<u>Demand Charge:</u>				
Total kWb	34.1	34.1	\$196	\$196
Customer Charge			\$60	\$60
Time-of-Day Metering Charge				\$10
Primary Voltage Service Discount			\$0	\$0
Power Factor Adjustment			\$0	\$0
Total Base Revenue Per Month			\$1,490	\$1,385
Fuel Oil Adjustment			\$0	\$0
Rate Adjustment (AES Refund)			\$0	\$0
IRP Adjustment			\$0	\$0
DSM Adjustment			\$0	\$0
Total Revenue Per Month			\$1,490	\$1,385
Total Revenue Per Year (\$000s)			\$17.9	\$16.6
Rider Adjustment (\$000s/Yr)				(\$1.3)

Hawaiian Electric Company, Inc.
Schedule J - General Service Demand
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Rider T J21

	<u>Billing Units @ Present Rates</u>		<u>Revenues @ Present Rates</u>	
	Sch. J	Rider T	Sch. J	Rider T
Billing Load Per Month:				
Curtailable Load				
Billing kW	39.4	39.3		
kWh Per Month	19,920	19,920		
On-Peak kWh		10,700		
Off-Peak kWh		9,220		
Power Factor	85	85		
<u>Energy Charge:</u>				
0 - 200 kWh/kW	7,880	7,860	\$685	\$683
201 - 400 kWh/kW	7,880	7,860	\$594	\$593
>400 kWh/kW	4,160	4,200	\$271	\$274
Subtotal	19,920	19,920	\$1,550	\$1,550
On-Peak Surcharge		10,700		\$214
Off-Peak Credit		9,220		(\$277)
Rider T Energy Charge Adjustment		19,920		(\$63)
<u>Demand Charge:</u>				
Total kWb	39.4	39.3	\$227	\$226
Customer Charge			\$60	\$60
Time-of-Day Metering Charge				\$10
Primary Voltage Service Discount			\$0	\$0
Power Factor Adjustment			\$0	\$0
Total Base Revenue Per Month			\$1,837	\$1,783
Fuel Oil Adjustment			\$0	\$0
Rate Adjustment (AES Refund)			\$0	\$0
IRP Adjustment			\$0	\$0
DSM Adjustment			\$0	\$0
Total Revenue Per Month			\$1,837	\$1,783
Total Revenue Per Year (\$000s)			\$22.0	\$21.4
Rider Adjustment (\$000s/Yr)				(\$0.6)

Hawaiian Electric Company, Inc.
Schedule J - General Service Demand
Docket No. 2006-0386, Test-Year 2007

Rider T J22

	<u>Billing Units @ Present Rates</u>		<u>Revenues @ Present Rates</u>	
	Sch. J	Rider T	Sch. J	Rider T
Billing Load Per Month:				
Curtailable Load				
Billing kW	115.3	105.3		
kWh Per Month	17,320	17,320		
On-Peak kWh		5,680		
Off-Peak kWh		11,640		
Power Factor	85	85		
<u>Energy Charge:</u>				
0 - 200 kWh/kW	17,320	17,320	\$1,505	\$1,505
201 - 400 kWh/kW	0	0	\$0	\$0
>400 kWh/kW	0	0	\$0	\$0
Subtotal	17,320	17,320	\$1,505	\$1,505
On-Peak Surcharge		5,680		\$114
Off-Peak Credit		11,640		(\$349)
Rider T Energy Charge Adjustment		17,320		(\$235)
<u>Demand Charge:</u>				
Total kWb	115.3	105.3	\$663	\$605
Customer Charge			\$60	\$60
Time-of-Day Metering Charge				\$10
Primary Voltage Service Discount			\$0	\$0
Power Factor Adjustment			\$0	\$0
Total Base Revenue Per Month			\$2,228	\$1,945
Fuel Oil Adjustment			\$0	\$0
Rate Adjustment (AES Refund)			\$0	\$0
IRP Adjustment			\$0	\$0
DSM Adjustment			\$0	\$0
Total Revenue Per Month			\$2,228	\$1,945
Total Revenue Per Year (\$000s)			\$26.7	\$23.3
Rider Adjustment (\$000s/Yr)				(\$3.4)

Hawaiian Electric Company, Inc.
Schedule J - General Service Demand
Docket No. 2006-0386, Test-Year 2007

Rider T J23

	<u>Billing Units @ Present Rates</u>		<u>Revenues @ Present Rates</u>	
	Sch. J	Rider T	Sch. J	Rider T
Billing Load Per Month:				
Curtailable Load				
Billing kW	34.1	33.9		
kWh Per Month	14,927	14,927		
On-Peak kWh		5,973		
Off-Peak kWh		8,954		
Power Factor	85	85		
<u>Energy Charge:</u>				
0 - 200 kWh/kW	6,820	6,780	\$593	\$589
201 - 400 kWh/kW	6,820	6,780	\$514	\$511
>400 kWh/kW	1,287	1,367	\$84	\$89
Subtotal	14,927	14,927	\$1,191	\$1,189
On-Peak Surcharge		5,973		\$119
Off-Peak Credit		8,954		(\$269)
Rider T Energy Charge Adjustment		14,927		(\$150)
<u>Demand Charge:</u>				
Total kWb	34.1	33.9	\$196	\$195
Customer Charge			\$60	\$60
Time-of-Day Metering Charge				\$10
Primary Voltage Service Discount			\$0	\$0
Power Factor Adjustment			\$0	\$0
Total Base Revenue Per Month			\$1,447	\$1,304
Fuel Oil Adjustment			\$0	\$0
Rate Adjustment (AES Refund)			\$0	\$0
IRP Adjustment			\$0	\$0
DSM Adjustment			\$0	\$0
Total Revenue Per Month			\$1,447	\$1,304
Total Revenue Per Year (\$000s)			\$17.4	\$15.6
Rider Adjustment (\$000s/Yr)				(\$1.8)

Hawaiian Electric Company, Inc.
Schedule J - General Service Demand
Docket No. 2006-0386, Test-Year 2007

Rider T J24

	<u>Billing Units @ Present Rates</u>		<u>Revenues @ Present Rates</u>	
	Sch. J	Rider T	Sch. J	Rider T
Billing Load Per Month:				
Curtailable Load				
Billing kW	286.4	169.9		
kWh Per Month	62,400	62,400		
On-Peak kWh		16,700		
Off-Peak kWh		45,700		
Power Factor	87	87		
<u>Energy Charge:</u>				
0 - 200 kWh/kW	57,280	33,980	\$4,978	\$2,953
201 - 400 kWh/kW	5,120	28,420	\$386	\$2,143
>400 kWh/kW	0	0	\$0	\$0
Subtotal	62,400	62,400	\$5,364	\$5,096
On-Peak Surcharge		16,700		\$334
Off-Peak Credit		45,700		(\$1,371)
Rider T Energy Charge Adjustment		62,400		(\$1,037)
<u>Demand Charge:</u>				
Total kWb	286.4	169.9	\$1,647	\$977
Customer Charge			\$60	\$60
Time-of-Day Metering Charge				\$10
Primary Voltage Service Discount			\$0	\$0
Power Factor Adjustment			(\$14)	(\$12)
Total Base Revenue Per Month			\$7,057	\$5,094
Fuel Oil Adjustment			\$0	\$0
Rate Adjustment (AES Refund)			\$0	\$0
IRP Adjustment			\$0	\$0
DSM Adjustment			\$0	\$0
Total Revenue Per Month			\$7,057	\$5,094
Total Revenue Per Year (\$000s)			\$84.7	\$61.1
Rider Adjustment (\$000s/Yr)				(\$23.6)

Hawaiian Electric Company, Inc.
Schedule J - General Service Demand
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Rider T J25

	<u>Billing Units @ Present Rates</u>		<u>Revenues @ Present Rates</u>	
	Sch. J	Rider T	Sch. J	Rider T
Billing Load Per Month:				
Curtailable Load				
Billing kW	421.4	25.0		
kWh Per Month	34,944	34,944		
On-Peak kWh		0		
Off-Peak kWh		34,944		
Power Factor	87	87		
<u>Energy Charge:</u>				
0 - 200 kWh/kW	34,944	5,000	\$3,037	\$435
201 - 400 kWh/kW	0	5,000	\$0	\$377
>400 kWh/kW	0	24,944	\$0	\$1,625
Subtotal	34,944	34,944	\$3,037	\$2,437
On-Peak Surcharge		0		\$0
Off-Peak Credit		34,944		(\$1,048)
Rider T Energy Charge Adjustment		34,944		(\$1,048)
<u>Demand Charge:</u>				
Total kWb	421.4	25.0	\$2,423	\$144
Customer Charge			\$60	\$60
Time-of-Day Metering Charge				\$10
Primary Voltage Service Discount			\$0	\$0
Power Factor Adjustment			(\$11)	(\$5)
Total Base Revenue Per Month			\$5,509	\$1,598
Fuel Oil Adjustment			\$0	\$0
Rate Adjustment (AES Refund)			\$0	\$0
IRP Adjustment			\$0	\$0
DSM Adjustment			\$0	\$0
Total Revenue Per Month			\$5,509	\$1,598
Total Revenue Per Year (\$000s)			\$66.1	\$19.2
Rider Adjustment (\$000s/Yr)				(\$46.9)

Hawaiian Electric Company, Inc.
Schedule J - General Service Demand
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Rider Mbl J1

	<u>Billing Units @ Present Rates</u>		<u>Revenues @ Present Rates</u>	
	Sch. J3	Riders M(b)&I	Sch. J3	Riders M(b)&I
Billing Load Per Month:				
Curtailable Load				
Billing kW	3,776.0	475.2		
kWh Per Month	218,000	218,000		
On-Peak kWh		0		
Off-Peak kWh		0		
Power Factor	68	68		
<u>Energy Charge:</u>				
0 - 200 kWh/kW	218,000	95,040	\$18,944	\$8,259
201 - 400 kWh/kW	0	95,040	\$0	\$7,168
>400 kWh/kW	0	27,920	\$0	\$1,818
Subtotal	218,000	218,000	\$18,944	\$17,245
On-Peak Surcharge		0		\$0
Off-Peak Credit		0		\$0
Rider T Energy Charge Adjustment		0		\$0
<u>Demand Charge:</u>				
Total kWb	3,776.0	475.2	\$21,712	\$2,732
Customer Charge			\$60	\$60
Time-of-Day Metering Charge				\$10
Primary Voltage Service Discount			(\$772)	(\$380)
Power Factor Adjustment			\$691	\$340
Total Base Revenue Per Month			\$40,635	\$20,007
Fuel Oil Adjustment			\$0	\$0
Rate Adjustment (AES Refund)			\$0	\$0
IRP Adjustment			\$0	\$0
DSM Adjustment			\$0	\$0
Total Revenue Per Month			\$40,635	\$20,007
Total Revenue Per Year (\$000s)			\$487.6	\$240.1
Rider Adjustment (\$000s/Yr)				(\$247.5)

Hawaiian Electric Company, Inc.
Schedule J - General Service Demand
Docket No. 2006-0386, Test-Year 2007

Sch U J1

	<u>Billing Units @ Present Rates</u>		<u>Revenues @ Present Rates</u>	
	Sch. J	Sch. U	Sch. J	Sch. U
Billing Load Per Month:				
Curtailable Load				
Billing kW	597.3	91.0		
kWh Per Month	117,287	117,287		
On-Peak kWh		493		
Off-Peak kWh		116,793		
Power Factor	91	91		
<u>Energy Charge:</u>				
0 - 200 kWh/kW	117,287		\$10,192	
201 - 400 kWh/kW	0		\$0	
>400 kWh/kW	0		\$0	
Subtotal	117,287		\$10,192	
On-Peak kWh		493		\$39
Off-Peak kWh		116,793		\$3,504
Rider U Energy Charge		117,286		\$3,543
<u>Demand Charge:</u>				
Total kWb	597.3	91.0	\$3,434	\$1,547
Customer Charge			\$60	\$215
Primary Voltage Service Discount			\$0	\$0
Power Factor Adjustment			(\$82)	(\$31)
Total Base Revenue Per Month			\$13,604	\$5,274
Fuel Oil Adjustment			\$0	\$0
Rate Adjustment (AES Refund)			\$0	\$0
IRP Adjustment			\$0	\$0
DSM Adjustment			\$0	\$0
Total Revenue Per Month			\$13,604	\$5,274
Total Revenue Per Year (\$000s)			\$163.2	\$63.3
Rider Adjustment (\$000s/Yr)				(\$99.9)

Hawaiian Electric Company, Inc.
Schedule J - General Service Demand
Docket No. 2006-0386, Test-Year 2007

Sch U J2

	<u>Billing Units @ Present Rates</u>		<u>Revenues @ Present Rates</u>	
	Sch. J	Sch. U	Sch. J	Sch. U
Billing Load Per Month:				
Curtailable Load				
Billing kW	284.3	40.6		
kWh Per Month	36,033	36,033		
On-Peak kWh		3,073		
Off-Peak kWh		32,960		
Power Factor	89	89		
<u>Energy Charge:</u>				
0 - 200 kWh/kW	36,033		\$3,131	
201 - 400 kWh/kW	0		\$0	
>400 kWh/kW	0		\$0	
Subtotal	36,033		\$3,131	
On-Peak kWh		3,073		\$240
Off-Peak kWh		32,960		\$989
Rider U Energy Charge		36,033		\$1,229
<u>Demand Charge:</u>				
Total kWb	284.3	40.6	\$1,635	\$690
Customer Charge			\$60	\$215
Primary Voltage Service Discount			\$0	\$0
Power Factor Adjustment			(\$19)	(\$8)
Total Base Revenue Per Month			\$4,807	\$2,126
Fuel Oil Adjustment			\$0	\$0
Rate Adjustment (AES Refund)			\$0	\$0
IRP Adjustment			\$0	\$0
DSM Adjustment			\$0	\$0
Total Revenue Per Month			\$4,807	\$2,126
Total Revenue Per Year (\$000s)			\$57.7	\$25.5
Rider Adjustment (\$000s/Yr)				(\$32.2)

Hawaiian Electric Company, Inc.
Schedule J - General Service Demand
Docket No. 2006-0386, Test-Year 2007

Sch U J3

	<u>Billing Units @ Present Rates</u>		<u>Revenues @ Present Rates</u>	
	Sch. J	Sch. U	Sch. J	Sch. U
Billing Load Per Month:				
Curtailable Load				
Billing kW	365.8	36.5		
kWh Per Month	81,227	81,227		
On-Peak kWh		1,313		
Off-Peak kWh		79,913		
Power Factor	96	96		
<u>Energy Charge:</u>				
0 - 200 kWh/kW	73,160		\$6,358	
201 - 400 kWh/kW	8,067		\$608	
>400 kWh/kW	0		\$0	
Subtotal	81,227		\$6,966	
On-Peak kWh		1,313		\$103
Off-Peak kWh		79,913		\$2,397
Rider U Energy Charge		81,226		\$2,500
<u>Demand Charge:</u>				
Total kWb	365.8	36.5	\$2,103	\$621
Customer Charge			\$60	\$215
Primary Voltage Service Discount			\$0	\$0
Power Factor Adjustment			(\$100)	(\$34)
Total Base Revenue Per Month			\$9,029	\$3,302
Fuel Oil Adjustment			\$0	\$0
Rate Adjustment (AES Refund)			\$0	\$0
IRP Adjustment			\$0	\$0
DSM Adjustment			\$0	\$0
Total Revenue Per Month			\$9,029	\$3,302
Total Revenue Per Year (\$000s)			\$108.3	\$39.6
Rider Adjustment (\$000s/Yr)				(\$68.7)

Hawaiian Electric Company, Inc.
Schedule J - General Service Demand
Docket No. 2006-0386, Test-Year 2007

Sch U J4

	<u>Billing Units @ Present Rates</u>		<u>Revenues @ Present Rates</u>	
	Sch. J	Sch. U	Sch. J	Sch. U
Billing Load Per Month:				
Curtailable Load				
Billing kW	614.0	25.0		
kWh Per Month	135,220	135,220		
On-Peak kWh		280		
Off-Peak kWh		134,940		
Power Factor	95	95		
<u>Energy Charge:</u>				
0 - 200 kWh/kW	122,800		\$10,671	
201 - 400 kWh/kW	12,420		\$937	
>400 kWh/kW	0		\$0	
Subtotal	135,220		\$11,608	
On-Peak kWh		280		\$22
Off-Peak kWh		134,940		\$4,048
Rider U Energy Charge		135,220		\$4,070
<u>Demand Charge:</u>				
Total kWb	614.0	25.0	\$3,531	\$425
Customer Charge			\$60	\$215
Primary Voltage Service Discount			\$0	\$0
Power Factor Adjustment			(\$151)	(\$45)
Total Base Revenue Per Month			\$15,048	\$4,665
Fuel Oil Adjustment			\$0	\$0
Rate Adjustment (AES Refund)			\$0	\$0
IRP Adjustment			\$0	\$0
DSM Adjustment			\$0	\$0
Total Revenue Per Month			\$15,048	\$4,665
Total Revenue Per Year (\$000s)			\$180.6	\$56.0
Rider Adjustment (\$000s/Yr)				(\$124.6)

HAWAIIAN ELECTRIC COMPANY, INC.
SCHEDULE PS - LARGE POWER SECONDARY VOLTAGE SERVICE
DOCKET NO. 2006-0386 TEST-YEAR: 2007

ESTIMATE OF TEST YEAR REVENUES

<u>PRESENT RATES</u>			
	<u>BILLING</u> <u>UNITS</u>	<u>UNIT PRICE</u>	<u>REVENUES</u> <u>\$1000S</u>
<u>ENERGY CHARGE:</u>	<u>(MWH)</u>	<u>¢/kWh</u>	
0 - 200 KWH/KW	366,774	7.2087	\$26,439.6
201 - 400 KWH/KW	338,271	6.4104	\$21,684.5
> 400 KWH/KW	<u>130,812</u>	6.1010	<u>\$7,980.8</u>
SUBTOTAL	835,857		\$56,104.9
<u>DEMAND CHARGE:</u>	<u>(kW)</u>	<u>\$/kW</u>	
0 - 500 KW	1,034,937	10.00	\$10,349.4
501 - 1500 KW	479,646	9.50	\$4,556.6
> 1500 KW	<u>367,120</u>	8.50	<u>\$3,120.5</u>
SUBTOTAL	1,881,703		\$18,026.5
	<u>BILLS</u>	<u>\$/month</u>	
<u>CUSTOMER CHARGE:</u>	2,303	320.00	\$737.0
<u>ADJUSTMENTS:</u>			
MISCELLANEOUS **			(\$516.2)
Fuel Oil Adjustment	¢/kWh	7.299	\$61,009.2
Rate Adjustment (AES Refund)	%	-0.406%	(\$301.9)
TOTAL REVENUE			<u>\$135,059.5</u>
INTERIM RATE INCREASE REVENUES			\$5,687.9
TOTAL REVENUE AT CURRENT EFFECTIVE RATES			<u>\$140,747.4</u>

** INCLUDES Schedule E Adj., Power Factor Adj., Network Adj., and Rider Adjustments.

HAWAIIAN ELECTRIC COMPANY, INC.
SCHEDULE PS - LARGE POWER SECONDARY VOLTAGE SERVICE
DOCKET NO. 2006-0386 TEST-YEAR: 2007

DISTRIBUTION OF SALES & BILLS
BY VOLTAGE SUPPLY SERVICE

<u>RECORDED:</u>	<u>NUMBER OF BILLS</u>	<u>PERCENT OF TOTAL</u>	<u>MWH SALES</u>	<u>PERCENT OF TOTAL</u>	<u>GVARH</u>
PT1	48	1.1	176,509	5.7	24.918397
PT2	-	0.0	0	0.0	0.000000
PP3	1,845	43.2	2,043,078	66.4	564.711787
PP4	89	2.1	20,902	0.7	5.168016
PS5	190	4.4	154,413	5.0	43.961400
PS	<u>2,103</u>	<u>49.2</u>	<u>680,486</u>	<u>22.2</u>	<u>272.886220</u>
TOTAL	4,275	100.0	3,075,389	100.0	911.645820

<u>FORECASTS:</u>	<u>PERCENT OF TOTAL</u>	<u>NUMBER OF BILLS</u>	<u>PERCENT OF TOTAL</u>	<u>MWH SALES</u>
PT1	1.1	47	5.7	175,161
PT2	0.0	-	0.0	0
PP3	43.2	1,856	66.4	2,040,472
PP4	2.1	90	0.7	21,511
PS5	4.4	189	5.0	153,650
PS	<u>49.2</u>	<u>2,114</u>	<u>22.2</u>	<u>682,206</u>
TOTAL	100.0	4,296	100.0	3,073,000

HAWAIIAN ELECTRIC COMPANY, INC.
SCHEDULE PS - LARGE POWER SECONDARY VOLTAGE SERVICE
DOCKET NO. 2006-0386 TEST-YEAR: 2007

DETERMINATION OF TEST-YEAR BILLING KW
BY VOLTAGE SUPPLY SERVICE

<u>TYPE OF CUSTOMERS:</u>	<u>RECORDED</u>		<u>FORECASTS</u>	
	<u>KW</u>	<u>KWH/KW</u>	<u>KW</u>	<u>KWH/KW</u>
PT1	286,539	616.00	284,352	616.00
PT2	-	-	-	-
PP3	4,126,052	495.17	4,120,750	495.17
PP4	41,061	509.06	42,256	509.06
PS5	401,830	384.28	399,839	384.28
PS	<u>1,478,133</u>	<u>460.37</u>	<u>1,481,865</u>	<u>460.37</u>
TOTAL	6,333,615.3	485.57	6,329,062	485.57

HAWAIIAN ELECTRIC COMPANY, INC.
SCHEDULE PS - LARGE POWER SECONDARY VOLTAGE SERVICE
DOCKET NO. 2006-0386 TEST-YEAR: 2007

DETERMINATION OF TEST-YEAR BILLING LOADS
FOR SCHEDULE PS5 CUSTOMERS

	UPPER LIM. OF BLK. AS % OF AVE. <u>USE/BILL</u>	CUM UNIT @ EA. UPPER LIM. AS % <u>OF TOTAL</u>	% UNITS BILLED IN <u>EA. BLOCK</u>	UNITS BILLED IN <u>EA. BLOCK</u>
<u>DEMAND CHARGE:</u>				
0 - 500 KW	23.63	23.63	23.63	94,482
501 - 1500 KW	70.90	63.31	39.68	158,656
> 1500 KW		100.00	36.69	146,701
TOTAL			100.00	399,839
<u>ENERGY CHARGE:</u>				
0 - 200 KWH/KW		49.08	49.08	75,411
201 - 400 KWH/KW		91.48	42.40	65,148
> 400 KWH/KW		100.00	8.52	13,090
TOTAL			100.00	153,650
<u>FORECASTS:</u>				
SALES, MWH	153,650			
BILLS	189			
KW	399,839			
KWH/BILL	812,963			
KW/BILL	2,116			

HAWAIIAN ELECTRIC COMPANY, INC.
SCHEDULE PS - LARGE POWER SECONDARY VOLTAGE SERVICE
DOCKET NO. 2006-0386 TEST-YEAR: 2007

DETERMINATION OF REVENUES AND NETWORK ADJ. FOR NETWORK SERVICE

Rate Block	Billing Units	PRESENT RATES	
		Unit Price	Revenues \$000s
<u>DEMAND CHARGE:</u>	<u>kW</u>	<u>\$/kW</u>	
0 - 500 KW	94,482	10.00	\$944.8
501 - 1500 KW	158,656	9.50	\$1,507.2
> 1500 KW	146,701	8.50	\$1,247.0
SUBTOTAL	399,839		\$3,699.0
<u>ENERGY CHARGE:</u>	<u>MWH</u>	<u>¢/kWh</u>	
0 - 200 KWH/KW	75,411	7.2087	\$5,436.2
201 - 400 KWH/KW	65,148	6.4104	\$4,176.2
> 400 KWH/KW	13,090	6.1010	\$798.6
SUBTOTAL	153,649		\$10,411.0
Total Demand & Energy			\$14,110.0
<u>Supply Voltage Adj.</u>		<u>% Adj.</u>	
Network Adjustment		0.9	\$127.0

HAWAIIAN ELECTRIC COMPANY, INC.
SCHEDULE PS - LARGE POWER SECONDARY VOLTAGE SERVICE
DOCKET NO. 2006-0386 TEST-YEAR: 2007

DETERMINATION OF TEST-YEAR BILLING LOADS
FOR SCHEDULE PS CUSTOMERS

	UPPER LIM. OF BLK. AS % OF AVE. <u>USE/BILL</u>	CUM UNIT @ EA. UPPER LIM. AS % <u>OF TOTAL</u>	% UNITS BILLED IN <u>EA. BLOCK</u>	UNITS BILLED IN <u>EA. BLOCK</u>
<u>DEMAND CHARGE:</u>				
0 - 500 KW	61.19	55.00	55.00	1,034,937
501 - 1500 KW	183.58	80.49	25.49	479,646
> 1500 KW		100.00	19.51	367,120
TOTAL			100.00	1,881,704
<u>ENERGY CHARGE:</u>				
0 - 200 KWH/KW		43.88	43.88	366,774
201 - 400 KWH/KW		84.35	40.47	338,271
> 400 KWH/KW		100.00	15.65	130,812
TOTAL			100.00	835,856
<u>FORECASTS:</u>				
SALES, MWH	835,856			
BILLS	2,303			
KW	1,881,704			
KWH/BILL	362,942			
KW/BILL	817			

HAWAIIAN ELECTRIC COMPANY, INC.
SCHEDULE PS - LARGE POWER SECONDARY VOLTAGE SERVICE
DOCKET NO. 2006-0386 TEST-YEAR: 2007

DETERMINATION OF POWER FACTOR ADJUSTMENT

	Recorded
Kwh	834,898,806
Kvarhrs	316,847,620
POWER FACTOR CALCULATED	93.49

	<u>Present Rates</u>
CALCULATED PF (%)	93.0
BASE PF (%)	<u>85.0</u>
DIFFERENCE	(8.0)
ADJ. FOR EA. 1% DIFF.	0.001
PF ADJUSTMENT RATE	(0.008)
Demand + Energy Charges	\$74,131.4
POWER FACTOR ADJUSTMENT	(\$593.1)

HAWAIIAN ELECTRIC COMPANY, INC.
SCHEDULE PS - LARGE POWER SECONDARY VOLTAGE SERVICE
DOCKET NO. 2006-0386 TEST-YEAR: 2007

ESTIMATE OF TEST YEAR REVENUES

<u>PRESENT RATES</u>			
	<u>BILLING UNITS</u>	<u>UNIT PRICE</u>	<u>REVENUES \$1000S</u>
<u>ENERGY CHARGE:</u>	<u>(MWH)</u>	<u>¢/kWh</u>	
0 - 200 KWH/KW	366,774	7.2087	\$26,439.6
201 - 400 KWH/KW	338,271	6.4104	\$21,684.5
> 400 KWH/KW	<u>130,812</u>	<u>6.1010</u>	<u>\$7,980.8</u>
SUBTOTAL	835,857		\$56,104.9
<u>DEMAND CHARGE:</u>	<u>(kW)</u>	<u>\$/kW</u>	
0 - 500 KW	1,034,937	10.00	\$10,349.4
501 - 1500 KW	479,646	9.50	\$4,556.6
> 1500 KW	<u>367,120</u>	<u>8.50</u>	<u>\$3,120.5</u>
SUBTOTAL	1,881,703		\$18,026.5
	<u>BILLS</u>	<u>\$/month</u>	
<u>CUSTOMER CHARGE:</u>	2,303	320.00	\$737.0
<u>ADJUSTMENTS:</u>			
POWER FACTOR ADJ.			(\$593.1)
NETWORK ADJ.			\$127.0
Schedule E Adjustment			<u>\$0.0</u>
SUBTOTAL			(\$466.1)
UNADJUSTED BASE REVENUE			<u>\$74,402.3</u>
RATE RIDER & OTHER REVENUE ADJ.			
RIDER M (B)			(\$48.4)
RIDER I			\$0.0
RIDER T			(\$1.7)
RULE 4 CHP CONTRACTS ADJ.			\$0.0
Total Rate Rider & Other Revenue Adjustments			<u>(\$50.1)</u>
TOTAL BASE REVENUE			<u>\$74,352.2</u>
Fuel Oil Adjustment	¢/kWh	7.299	\$61,009.2
Rate Adjustment (AES Refund)	%	-0.406%	(\$301.9)
TOTAL REVENUE			<u>\$135,059.5</u>

HAWAIIAN ELECTRIC COMPANY, INC.
SCHEDULE PS - LARGE POWER SECONDARY VOLTAGE SERVICE
DOCKET NO. 2006-0386 TEST-YEAR: 2007

SUMMARY OF TEST-YEAR REVENUES ADJUSTMENTS
FOR RIDER SERVICE AT PRESENT RATES

<u>RIDER M(B)</u>	<u>PRESENT</u> <u>(\$1000s)</u>
Rider Mb PS1	(\$1.7)
Rider Mb PS2	(\$16.2)
Rider Mb PS3	(\$5.2)
Rider Mb PS4	(\$25.3)
TOTAL	(\$48.4)
<u>RIDER I</u>	<u>PRESENT</u> <u>(\$1000s)</u>
TOTAL	\$0.0
<u>RIDER T</u>	<u>PRESENT</u> <u>(\$1000s)</u>
Rider T PS1	(\$1.7)
TOTAL	(\$1.7)
<u>RULE 4 CHP CUSTOMERS</u>	<u>PRESENT</u> <u>(\$1000s)</u>
TOTAL	\$0.0

Hawaiian Electric Company, Inc.
Schedule PS - Large Power Secondary Voltage Service
DOCKET NO. 2006-0386 TEST-YEAR: 2007

Rider Mb PS1

	<u>Billing Units</u>		<u>Revenues @ Present Rates</u>	
	Sch. PS	Rider M(b)	Sch. PS	Rider M(b)
Billing Load Per Month:				
Curtaillable Load		16.2		
Billing kW	671.4	659.2		
kWh Per Month	317,600	317,600		
On-Peak kWh		0		
Off-Peak kWh		0		
Power Factor	89	89		
kVarhr Per Month	160,240	160,240		
<u>Energy Charge:</u>				
0 - 200 kWh/kW	134,280	131,840	\$9,680	\$9,504
201 - 400 kWh/kW	134,280	131,840	\$8,608	\$8,451
>400 kWh/kW	49,040	53,920	\$2,992	\$3,290
Subtotal	317,600	317,600	\$21,280	\$21,245
On-Peak Surcharge		0		\$0
Off-Peak Credit		0		\$0
Rider T Energy Charge Adjustment		0		\$0
<u>Demand Charge:</u>				
0 - 500 kWb	500.0	500.0	\$5,000	\$5,000
501 - 1500 kWb	171.4	159.2	\$1,628	\$1,512
>1500 kWb	0.0	0.0	\$0	\$0
Subtotal	671.4	659.2	\$6,628	\$6,512
Customer Charge			\$320	\$320
Time-of-Day Metering Charge				\$10
Power Factor Adjustment			(\$112)	(\$111)
kVarhr Charge			\$0	\$0
Total Base Revenue Per Month			\$28,116	\$27,976
Fuel Oil Adjustment			\$0	\$0
Rate Adjustment (AES Refund)			\$0	\$0
IRP Adjustment			\$0	\$0
DSM Adjustment			\$0	\$0
Total Revenue Per Month			\$28,116	\$27,976
Total Revenue Per Year (\$000s)			\$337.4	\$335.7
Rider Adjustment (\$000s/Yr)				(\$1.7)

Hawaiian Electric Company, Inc.
Schedule PS - Large Power Secondary Voltage Service
DOCKET NO. 2006-0386 TEST-YEAR: 2007

Rider Mb PS2

	<u>Billing Units</u>		<u>Revenues @ Present Rates</u>	
	Sch. PS	Rider M(b)	Sch. PS	Rider M(b)
Billing Load Per Month:				
Curtailable Load		149.0		
Billing kW	769.0	657.2		
kWh Per Month	335,567	335,567		
On-Peak kWh		0		
Off-Peak kWh		0		
Power Factor	100	100		
kVarhr Per Month	24,033	24,033		
<u>Energy Charge:</u>				
0 - 200 kWh/kW	153,800	131,440	\$11,087	\$9,475
201 - 400 kWh/kW	153,800	131,440	\$9,859	\$8,426
>400 kWh/kW	27,967	72,687	\$1,706	\$4,435
Subtotal	335,567	335,567	\$22,652	\$22,336
On-Peak Surcharge		0		\$0
Off-Peak Credit		0		\$0
Rider T Energy Charge Adjustment		0		\$0
<u>Demand Charge:</u>				
0 - 500 kWb	500.0	500.0	\$5,000	\$5,000
501 - 1500 kWb	269.0	157.2	\$2,556	\$1,493
>1500 kWb	0.0	0.0	\$0	\$0
Subtotal	769.0	657.2	\$7,556	\$6,493
Customer Charge			\$320	\$320
Time-of-Day Metering Charge				\$10
Power Factor Adjustment			(\$453)	(\$432)
kVarhr Charge			\$0	\$0
Total Base Revenue Per Month			\$30,075	\$28,727
Fuel Oil Adjustment			\$0	\$0
Rate Adjustment (AES Refund)			\$0	\$0
IRP Adjustment			\$0	\$0
DSM Adjustment			\$0	\$0
Total Revenue Per Month			\$30,075	\$28,727
Total Revenue Per Year (\$000s)			\$360.9	\$344.7
Rider Adjustment (\$000s/Yr)				(\$16.2)

Hawaiian Electric Company, Inc.
Schedule PS - Large Power Secondary Voltage Service
DOCKET NO. 2006-0386 TEST-YEAR: 2007

Rider Mb PS3

	<u>Billing Units</u>		<u>Revenues @ Present Rates</u>	
	Sch. PS	Rider M(b)	Sch. PS	Rider M(b)
Billing Load Per Month:				
Curtailable Load		47.6		
Billing kW	877.2	841.5		
kWh Per Month	400,480	400,480		
On-Peak kWh		0		
Off-Peak kWh		0		
Power Factor	81	81		
kVarhr Per Month	286,380	286,380		
<u>Energy Charge:</u>				
0 - 200 kWh/kW	175,440	168,300	\$12,647	\$12,132
201 - 400 kWh/kW	175,440	168,300	\$11,246	\$10,789
>400 kWh/kW	49,600	63,880	\$3,026	\$3,897
Subtotal	400,480	400,480	\$26,919	\$26,818
On-Peak Surcharge		0		\$0
Off-Peak Credit		0		\$0
Rider T Energy Charge Adjustment		0		\$0
<u>Demand Charge:</u>				
0 - 500 kWb	500.0	500.0	\$5,000	\$5,000
501 - 1500 kWb	377.2	341.5	\$3,583	\$3,244
>1500 kWb	0.0	0.0	\$0	\$0
Subtotal	877.2	841.5	\$8,583	\$8,244
Customer Charge			\$320	\$320
Time-of-Day Metering Charge				\$10
Power Factor Adjustment			\$142	\$140
kVarhr Charge			\$0	\$0
Total Base Revenue Per Month			\$35,964	\$35,532
Fuel Oil Adjustment			\$0	\$0
Rate Adjustment (AES Refund)			\$0	\$0
IRP Adjustment			\$0	\$0
DSM Adjustment			\$0	\$0
Total Revenue Per Month			\$35,964	\$35,532
Total Revenue Per Year (\$000s)			\$431.6	\$426.4
Rider Adjustment (\$000s/Yr)				(\$5.2)

Hawaiian Electric Company, Inc.
Schedule PS - Large Power Secondary Voltage Service
DOCKET NO. 2006-0386 TEST-YEAR: 2007

Rider Mb PS4

	<u>Billing Units</u>		<u>Revenues @ Present Rates</u>	
	Sch. PS	Rider M(b)	Sch. PS	Rider M(b)
Billing Load Per Month:				
Curtailable Load		251.2		
Billing kW	1,220.1	1,031.7		
kWh Per Month	345,990	345,990		
On-Peak kWh		0		
Off-Peak kWh		0		
Power Factor	76	76		
kVarhr Per Month	235,600	235,600		
<u>Energy Charge:</u>				
0 - 200 kWh/kW	244,020	206,340	\$17,591	\$14,874
201 - 400 kWh/kW	101,970	139,650	\$6,537	\$8,952
>400 kWh/kW	0	0	\$0	\$0
Subtotal	345,990	345,990	\$24,128	\$23,826
On-Peak Surcharge		0		\$0
Off-Peak Credit		0		\$0
Rider T Energy Charge Adjustment		0		\$0
<u>Demand Charge:</u>				
0 - 500 kWb	500.0	500.0	\$5,000	\$5,000
501 - 1500 kWb	720.1	531.7	\$6,841	\$5,051
>1500 kWb	0.0	0.0	\$0	\$0
Subtotal	1,220.1	1,031.7	\$11,841	\$10,051
Customer Charge			\$320	\$320
Time-of-Day Metering Charge				\$10
Power Factor Adjustment			\$324	\$305
kVarhr Charge			\$0	\$0
Total Base Revenue Per Month			\$36,613	\$34,512
Fuel Oil Adjustment			\$0	\$0
Rate Adjustment (AES Refund)			\$0	\$0
IRP Adjustment			\$0	\$0
DSM Adjustment			\$0	\$0
Total Revenue Per Month			\$36,613	\$34,512
Total Revenue Per Year (\$000s)			\$439.4	\$414.1
Rider Adjustment (\$000s/Yr)				(\$25.3)

Hawaiian Electric Company, Inc.
Schedule PS - Large Power Secondary Voltage Service
DOCKET NO. 2006-0386 TEST-YEAR: 2007

Rider T PS1

	<u>Billing Units</u>		<u>Revenues @ Present Rates</u>	
	Sch. PS	Rider T	Sch. PS	Rider T
Billing Load Per Month:				
Curtailable Load				
Billing kW	1,053.7	1,047.3		
kWh Per Month	509,100	509,100		
On-Peak kWh		304,033		
Off-Peak kWh		205,067		
Power Factor	88	88		
kVarhr Per Month	279,100	279,100		
<u>Energy Charge:</u>				
0 - 200 kWh/kW	210,740	209,460	\$15,192	\$15,099
201 - 400 kWh/kW	210,740	209,460	\$13,509	\$13,427
>400 kWh/kW	87,620	90,180	\$5,346	\$5,502
Subtotal	509,100	509,100	\$34,047	\$34,028
On-Peak Surcharge		304,033		\$6,081
Off-Peak Credit		205,067		(\$6,152)
Rider T Energy Charge Adjustment		509,100		(\$71)
<u>Demand Charge:</u>				
0 - 500 kWb	500.0	500.0	\$5,000	\$5,000
501 - 1500 kWb	553.7	547.3	\$5,260	\$5,199
>1500 kWb	0.0	0.0	\$0	\$0
Subtotal	1,053.7	1,047.3	\$10,260	\$10,199
Customer Charge			\$320	\$320
Time-of-Day Metering Charge				\$10
Power Factor Adjustment			(\$133)	(\$133)
kVarhr Charge			\$0	\$0
Total Base Revenue Per Month			\$44,494	\$44,353
Fuel Oil Adjustment			\$0	\$0
Rate Adjustment (AES Refund)			\$0	\$0
IRP Adjustment			\$0	\$0
DSM Adjustment			\$0	\$0
Total Revenue Per Month			\$44,494	\$44,353
Total Revenue Per Year (\$000s)			\$533.9	\$532.2
Rider Adjustment (\$000s/Yr)				(\$1.7)

HAWAIIAN ELECTRIC COMPANY, INC.
SCHEDULE PP - LARGE POWER PRIMARY VOLTAGE SERVICE
DOCKET NO. 04-0113 TEST-YEAR: 2005

ESTIMATE OF TEST YEAR REVENUES

	<u>PRESENT RATES</u>		
	<u>BILLING</u> <u>UNITS</u>	<u>UNIT PRICE</u>	<u>REVENUES</u> <u>\$1000S</u>
<u>ENERGY CHARGE:</u>	<u>(MWH)</u>	<u>¢/kWh</u>	
0 - 200 KWH/KW	797,782	7.0715	\$56,415.2
201 - 400 KWH/KW	744,994	6.2884	\$46,848.2
> 400 KWH/KW	<u>519,207</u>	5.9849	<u>\$31,074.0</u>
SUBTOTAL	2,061,983		\$134,337.4
<u>DEMAND CHARGE:</u>	<u>(kW)</u>	<u>\$/kW</u>	
0 - 500 KW	924,187	9.81	\$9,066.3
501 - 1500 KW	899,626	9.32	\$8,384.5
> 1500 KW	2,339,193	8.34	\$19,508.9
	-----		-----
SUBTOTAL	4,163,006		\$36,959.7
	<u>BILLS</u>	<u>\$/month</u>	
<u>CUSTOMER CHARGE:</u>	1,946	320.00	\$622.7
<u>ADJUSTMENTS:</u>	<u>(MWH)</u>	<u>¢/kWh</u>	
MISCELLANEOUS **			(\$2,633.2)
Fuel Oil Adjustment	¢/kWh	7.299	\$150,504.1
Rate Adjustment (AES Refund)	%	-0.406%	(\$687.3)
TOTAL REVENUE			<u>\$319,103.4</u>
INTERIM RATE INCREASE REVENUES			\$11,917.8
TOTAL REVENUE AT CURRENT EFFECTIVE RATES			<u>\$331,021.2</u>

HAWAIIAN ELECTRIC COMPANY, INC.
SCHEDULE PP - LARGE POWER PRIMARY VOLTAGE SERVICE
DOCKET NO. 04-0113 TEST-YEAR: 2005

DISTRIBUTION OF SALES & BILLS
BY VOLTAGE SUPPLY SERVICE

<u>RECORDED:</u>	<u>NUMBER OF BILLS</u>	<u>PERCENT OF TOTAL</u>	<u>MWH SALES</u>	<u>PERCENT OF TOTAL</u>	<u>GVARH</u>
PT1	48	1.1	176,509	5.7	24.918397
PT2	-	0.0	0	0.0	0.000000
PP3	1,845	43.2	2,043,078	66.4	564.711787
PP4	89	2.1	20,902	0.7	5.168016
PS5	190	4.4	154,413	5.0	43.961400
PS	<u>2,103</u>	<u>49.2</u>	<u>680,486</u>	<u>22.2</u>	<u>272.886220</u>
TOTAL	4,275	100.0	3,075,389	100.0	911.645820

<u>FORECASTS:</u>	<u>PERCENT OF TOTAL</u>	<u>NUMBER OF BILLS</u>	<u>PERCENT OF TOTAL</u>	<u>MWH SALES</u>
PT1	1.1	47	5.7	175,161
PT2	0.0	-	0.0	0
PP3	43.2	1,856	66.4	2,040,472
PP4	2.1	90	0.7	21,511
PS5	4.4	189	5.0	153,650
PS	<u>49.2</u>	<u>2,114</u>	<u>22.2</u>	<u>682,206</u>
TOTAL	100.0	4,296	100.0	3,073,000

HAWAIIAN ELECTRIC COMPANY, INC.
SCHEDULE PP - LARGE POWER PRIMARY VOLTAGE SERVICE
DOCKET NO. 04-0113 TEST-YEAR: 2005

DETERMINATION OF TEST-YEAR BILLING KW
BY VOLTAGE SUPPLY SERVICE

<u>TYPE OF CUSTOMERS:</u>	<u>RECORDED</u>		<u>FORECASTS</u>	
	<u>KW</u>	<u>KWH/KW</u>	<u>KW</u>	<u>KWH/KW</u>
PT1	286,539	616.00	284,352	616.00
PT2	-	-	-	-
PP3	4,126,052	495.17	4,120,750	495.17
PP4	41,061	509.06	42,256	509.06
PS5	401,830	384.28	399,839	384.28
PS	<u>1,478,133</u>	<u>460.37</u>	<u>1,481,865</u>	<u>460.37</u>
TOTAL	6,333,615.3	485.57	6,329,062	485.57

HAWAIIAN ELECTRIC COMPANY, INC.
SCHEDULE PP - LARGE POWER PRIMARY VOLTAGE SERVICE
DOCKET NO. 04-0113 TEST-YEAR: 2005

DETERMINATION OF TEST-YEAR BILLING LOADS
FOR SCHEDULE PP CUSTOMERS

	UPPER LIM. OF BLK. AS % OF AVE. <u>USE/BILL</u>	CUM UNIT @ EA. UPPER LIM. AS % <u>OF TOTAL</u>	% UNITS BILLED IN <u>EA. BLOCK</u>	UNITS BILLED IN <u>EA. BLOCK</u>
<u>DEMAND CHARGE:</u>				
0 - 500 KW	23.37	22.20	22.20	924,187
501 - 1500 KW	70.12	43.81	21.61	899,626
> 1500 KW		100.00	56.19	2,339,193
TOTAL			100.00	4,163,006
<u>ENERGY CHARGE:</u>				
0 - 200 KWH/KW		38.69	38.69	797,782
201 - 400 KWH/KW		74.82	36.13	744,994
> 400 KWH/KW		100.00	25.18	519,207
TOTAL			100.00	2,061,983
<u>FORECASTS:</u>				
SALES, MWH	2,061,983			
BILLS	1,946			
KW	4,163,006			
KWH/BILL	1,059,600.72			
KW/BILL	2,139.26			

HAWAIIAN ELECTRIC COMPANY, INC. PAGE 110 OF 140
DOCKET NO. 04-0113 TEST-YEAR: 2005
SCHEDULE PP - LARGE POWER PRIMARY VOLTAGE SERVICE
DETERMINATION OF POWER FACTOR ADJUSTMENT

	Recorded
KWH	2,063,980,755
KVARHR	569,879,803
POWER FACTOR	95.0000

	<u>Present Rates</u>
CALCULATED PF (%)	95.0
BASE PF (%)	<u>85.0</u>
DIFFERENCE	(10.0)
ADJ. FOR EA. 1% DIFF.	0.001
PF ADJUSTMENT RATE	(0.010)
TOTAL DMD/ENERGY CHR.	\$171,297.1
POWER FACTOR ADJ.	(\$1,713.0)

Hawaiian Electric Company, Inc.
Docket No. 04-0113 TY 2005
Schedule PP - Large Power Primary Voltage Service
Determination of Secondary Metering Adjustment for PP4 Service At Proposed

RATE BLOCKS	BILLING UNITS	SCHEDULE PP PROPOSED RATES	
		Unit Price	Revenues \$000s
<u>DEMAND CHARGE:</u>	<u>Kw</u>	<u>\$/Kw</u>	
0 - 500 KW	38,845.0	16.15	\$627.3
> 500 KW	3,870.0	15.65	\$60.6
SUBTOTAL	42,715.0		\$687.9
<u>ENERGY CHARGE:</u>	<u>MWH</u>	<u>c/KWh</u>	
0 - 200 KWH/KW	8,542.0	11.9604	\$1,021.7
201 - 400 KWH/KW	8,516.0	11.1772	\$951.9
> 400 KWH/KW	5,464.0	10.8737	\$594.1
SUBTOTAL	22,522.0		\$2,567.7
Total Energy & Demand			\$3,255.6
Customer Charge	95	400.00	\$38.0
		<u>c/KWh</u>	
Sec. Metering Adj.	0.015	0.2168	\$48.8
Total Revenues			\$3,342.4

HAWAIIAN ELECTRIC COMPANY, INC.
SCHEDULE PP - LARGE POWER PRIMARY VOLTAGE SERVICE
DOCKET NO. 04-0113 TEST-YEAR: 2005

ESTIMATE OF TEST YEAR REVENUES

	<u>PRESENT RATES</u>		
	<u>BILLING UNITS</u>	<u>UNIT PRICE</u>	<u>REVENUES \$1000S</u>
<u>ENERGY CHARGE:</u>	<u>(MWH)</u>	<u>¢/kWh</u>	
0 - 200 KWH/KW	797,782	7.0715	\$56,415.2
201 - 400 KWH/KW	744,994	6.2884	\$46,848.2
> 400 KWH/KW	519,207	5.9849	\$31,074.0
SUBTOTAL	2,061,983		\$134,337.4
<u>DEMAND CHARGE:</u>	<u>(kW)</u>	<u>\$/kW</u>	
0 - 500 KW	924,187	9.81	\$9,066.3
501 - 1500 KW	899,626	9.32	\$8,384.5
> 1500 KW	2,339,193	8.34	\$19,508.9
SUBTOTAL	4,163,006		\$36,959.7
	<u>BILLS</u>	<u>\$/month</u>	
<u>CUSTOMER CHARGE:</u>	1,946	320.00	\$622.7
<u>ADJUSTMENTS:</u>	<u>(MWH)</u>	<u>¢/kWh</u>	
POWER FACTOR ADJ.			(\$1,713.0)
SECONDARY METERING ADJ.	21,511	0.1081	\$23.3
Schedule E Adjustment			\$0.0
SUBTOTAL			(\$1,689.7)
UNADJUSTED BASE REVENUE			\$170,230.1
RATE RIDER & OTHER REVENUE ADJ.			
RIDER M (B)			(\$757.8)
RIDER I			(\$112.9)
MULTIPLE RIDERS			(\$72.8)
Total Rate Rider & Other Revenue Adjustments			(\$943.5)
Total Base Revenue			\$169,286.6
Fuel Oil Adjustment	¢/kWh	7.299	\$150,504.1
Rate Adjustment (AES Refund)	%	-0.406%	(\$687.3)
TOTAL REVENUE			\$319,103.4

HAWAIIAN ELECTRIC COMPANY, INC.
SCHEDULE PP - LARGE POWER PRIMARY VOLTAGE SERVICE
BASED ON DOCKET NO. 04-0113 TEST-YEAR: 2005

SUMMARY OF TEST-YEAR REVENUES ADJUSTMENTS
FOR RIDER SERVICE

<u>RIDER M(B)</u>	<u>PRESENT</u> <u>(\$1000s)</u>
Rider Mb PP1	(\$13.6)
Rider Mb PP2	(\$0.4)
Rider Mb PP3	(\$3.5)
Rider Mb PP4	(\$453.3)
Rider Mb PP5	(\$66.0)
Rider Mb PP6	(\$35.1)
Rider Mb PP7	(\$92.9)
Rider Mb PP8	(\$93.0)
 TOTAL	 (\$757.8)

<u>RIDER I</u>	<u>PRESENT</u> <u>(\$1000s)</u>
Rider I PP1	(\$31.7)
Rider I PP2	(\$81.2)
TOTAL	(\$112.9)

<u>MULTIPLE RIDERS</u>	<u>PRESENT</u> <u>(\$1000s)</u>
RiderMult PP1	(\$1.3)
RiderMult PP2	(\$71.5)
 TOTAL	 (\$72.8)

Hawaiian Electric Company, Inc.
Schedule PP - Large Power Primary Voltage Service
Based On Docket No. 04-0113 Test Year: 2005

Rider Mb PP1

	<u>Billing Units</u>		<u>Revenues @ Present Rates</u>	
	Sch. PP3	Rider M(b)	Sch. PP3	Rider M(b)
Billing Load Per Month:				
Curtaillable Load		126.0		
Billing kW	854.0	759.5		
kWh Per Month	396,133	396,133		
On-Peak kWh		0		
Off-Peak kWh		0		
Power Factor	87	87		
kVarhr Per Month	128,000	128,000		
<u>Energy Charge:</u>				
0 - 200 kWh/kW	170,800	151,900	\$12,078	\$10,742
201 - 400 kWh/kW	170,800	151,900	\$10,741	\$9,552
>400 kWh/kW	54,533	92,333	\$3,264	\$5,526
Subtotal	396,133	396,133	\$26,083	\$25,820
On-Peak Surcharge		0		\$0
Off-Peak Credit		0		\$0
Rider T Energy Charge Adjustment		0		\$0
<u>Demand Charge:</u>				
0 - 500 kWb	500.0	500.0	\$4,905	\$4,905
501 - 1500 kWb	354.0	259.5	\$3,299	\$2,419
>1500 kWb	0.0	0.0	\$0	\$0
Subtotal	854.0	759.5	\$8,204	\$7,324
Customer Charge			\$320	\$320
Time-of-Day Metering Charge				\$10
Power Factor Adjustment			(\$69)	(\$66)
kVarhr Charge			\$0	\$0
Total Base Revenue Per Month			\$34,538	\$33,408
Fuel Oil Adjustment			\$0	\$0
Rate Adjustment (AES Refund)			\$0	\$0
IRP Adjustment			\$0	\$0
DSM Adjustment			\$0	\$0
Total Revenue Per Month			\$34,538	\$33,408
Total Revenue Per Year (\$000s)			\$414.5	\$400.9
Rider Adjustment (\$000s/Yr)				(\$13.6)

Hawaiian Electric Company, Inc.
Schedule PP - Large Power Primary Voltage Service
Based On Docket No. 04-0113 Test Year: 2005

Rider Mb PP2

	<u>Billing Units</u>		<u>Revenues @ Present Rates</u>	
	Sch. PP3	Rider M(b)	Sch. PP3	Rider M(b)
Billing Load Per Month:				
Curtailable Load		4.8		
Billing kW	793.5	789.9		
kWh Per Month	474,100	474,100		
On-Peak kWh		0		
Off-Peak kWh		0		
Power Factor	98	98		
kVarhr Per Month	92,450	92,450		
<u>Energy Charge:</u>				
0 - 200 kWh/kW	158,700	157,980	\$11,222	\$11,172
201 - 400 kWh/kW	158,700	157,980	\$9,980	\$9,934
>400 kWh/kW	156,700	158,140	\$9,378	\$9,465
Subtotal	474,100	474,100	\$30,580	\$30,571
On-Peak Surcharge		0		\$0
Off-Peak Credit		0		\$0
Rider T Energy Charge Adjustment		0		\$0
<u>Demand Charge:</u>				
0 - 500 kWb	500.0	500.0	\$4,905	\$4,905
501 - 1500 kWb	293.5	289.9	\$2,735	\$2,702
>1500 kWb	0.0	0.0	\$0	\$0
Subtotal	793.5	789.9	\$7,640	\$7,607
Customer Charge			\$320	\$320
Time-of-Day Metering Charge				\$10
Power Factor Adjustment			(\$497)	(\$496)
kVarhr Charge			\$0	\$0
Total Base Revenue Per Month			\$38,043	\$38,012
Fuel Oil Adjustment			\$0	\$0
Rate Adjustment (AES Refund)			\$0	\$0
IRP Adjustment			\$0	\$0
DSM Adjustment			\$0	\$0
Total Revenue Per Month			\$38,043	\$38,012
Total Revenue Per Year (\$000s)			\$456.5	\$456.1
Rider Adjustment (\$000s/Yr)				(\$0.4)

Hawaiian Electric Company, Inc.
Schedule PP - Large Power Primary Voltage Service
Based On Docket No. 04-0113 Test Year: 2005

Rider Mb PP3

	<u>Billing Units</u>		<u>Revenues @ Present Rates</u>	
	Sch. PP3	Rider M(b)	Sch. PP3	Rider M(b)
Billing Load Per Month:				
Curtailable Load		32.3		
Billing kW	337.1	312.9		
kWh Per Month	179,583	179,583		
On-Peak kWh		0		
Off-Peak kWh		0		
Power Factor	97	97		
kVarhr Per Month	46,750	46,750		
<u>Energy Charge:</u>				
0 - 200 kWh/kW	67,420	62,580	\$4,768	\$4,425
201 - 400 kWh/kW	67,420	62,580	\$4,240	\$3,935
>400 kWh/kW	44,743	54,423	\$2,678	\$3,257
Subtotal	179,583	179,583	\$11,686	\$11,617
On-Peak Surcharge		0		\$0
Off-Peak Credit		0		\$0
Rider T Energy Charge Adjustment		0		\$0
<u>Demand Charge:</u>				
0 - 500 kWb	337.1	312.9	\$3,307	\$3,070
501 - 1500 kWb	0.0	0.0	\$0	\$0
>1500 kWb	0.0	0.0	\$0	\$0
Subtotal	337.1	312.9	\$3,307	\$3,070
Customer Charge			\$320	\$320
Time-of-Day Metering Charge				\$10
Power Factor Adjustment			(\$180)	(\$176)
kVarhr Charge			\$0	\$0
Total Base Revenue Per Month			\$15,133	\$14,841
Fuel Oil Adjustment			\$0	\$0
Rate Adjustment (AES Refund)			\$0	\$0
IRP Adjustment			\$0	\$0
DSM Adjustment			\$0	\$0
Total Revenue Per Month			\$15,133	\$14,841
Total Revenue Per Year (\$000s)			\$181.6	\$178.1
Rider Adjustment (\$000s/Yr)				(\$3.5)

Hawaiian Electric Company, Inc.
Schedule PP - Large Power Primary Voltage Service
Based On Docket No. 04-0113 Test Year: 2005

Rider Mb PP4

	<u>Billing Units</u>		<u>Revenues @ Present Rates</u>	
	Sch. PP3	Rider M(b)	Sch. PP3	Rider M(b)
Billing Load Per Month:				
Curtailable Load		6,120.0		
Billing kW	57,399.0	52,809.0		
kWh Per Month	0	0		
On-Peak kWh		0		
Off-Peak kWh		0		
Power Factor	98	98		
kVarhr Per Month	7,406,000	7,406,000		
<u>Energy Charge:</u>				
0 - 200 kWh/kW	0	0	\$0	\$0
201 - 400 kWh/kW	0	0	\$0	\$0
>400 kWh/kW	0	0	\$0	\$0
Subtotal	0	0	\$0	\$0
On-Peak Surcharge		0		\$0
Off-Peak Credit		0		\$0
Rider T Energy Charge Adjustment		0		\$0
<u>Demand Charge:</u>				
0 - 500 kWb	500.0	500.0	\$4,905	\$4,905
501 - 1500 kWb	1,000.0	1,000.0	\$9,320	\$9,320
>1500 kWb	55,899.0	51,309.0	\$466,198	\$427,917
Subtotal	57,399.0	52,809.0	\$480,423	\$442,142
Customer Charge			\$320	\$320
Time-of-Day Metering Charge				\$10
Power Factor Adjustment			(\$6,245)	(\$5,748)
kVarhr Charge			\$0	\$0
Total Base Revenue Per Month			\$474,498	\$436,724
Fuel Oil Adjustment			\$0	\$0
Rate Adjustment (AES Refund)			\$0	\$0
IRP Adjustment			\$0	\$0
DSM Adjustment			\$0	\$0
Total Revenue Per Month			\$474,498	\$436,724
Total Revenue Per Year (\$000s)			\$5,694.0	\$5,240.7
Rider Adjustment (\$000s/Yr)				(\$453.3)

Hawaiian Electric Company, Inc.
Schedule PP - Large Power Primary Voltage Service
Based On Docket No. 04-0113 Test Year: 2005

Rider Mb PP5

	<u>Billing Units</u>		<u>Revenues @ Present Rates</u>	
	Sch. PP3	Rider M(b)	Sch. PP3	Rider M(b)
Billing Load Per Month:				
Curtailable Load		737.0		
Billing kW	2,360.7	1,807.9		
kWh Per Month	756,000	756,000		
On-Peak kWh		0		
Off-Peak kWh		0		
Power Factor	97	97		
kVarhr Per Month	376,600	376,600		
<u>Energy Charge:</u>				
0 - 200 kWh/kW	472,140	361,580	\$33,387	\$25,569
201 - 400 kWh/kW	283,860	361,580	\$17,850	\$22,738
>400 kWh/kW	0	32,840	\$0	\$1,965
Subtotal	756,000	756,000	\$51,237	\$50,272
On-Peak Surcharge		0		\$0
Off-Peak Credit		0		\$0
Rider T Energy Charge Adjustment		0		\$0
<u>Demand Charge:</u>				
0 - 500 kWb	500.0	500.0	\$4,905	\$4,905
501 - 1500 kWb	1,000.0	1,000.0	\$9,320	\$9,320
>1500 kWb	860.7	307.9	\$7,178	\$2,568
Subtotal	2,360.7	1,807.9	\$21,403	\$16,793
Customer Charge			\$320	\$320
Time-of-Day Metering Charge				\$10
Power Factor Adjustment			(\$872)	(\$805)
kVarhr Charge			\$0	\$0
Total Base Revenue Per Month			\$72,088	\$66,590
Fuel Oil Adjustment			\$0	\$0
Rate Adjustment (AES Refund)			\$0	\$0
IRP Adjustment			\$0	\$0
DSM Adjustment			\$0	\$0
Total Revenue Per Month			\$72,088	\$66,590
Total Revenue Per Year (\$000s)			\$865.1	\$799.1
Rider Adjustment (\$000s/Yr)				(\$66.0)

Hawaiian Electric Company, Inc.
Schedule PP - Large Power Primary Voltage Service
Based On Docket No. 04-0113 Test Year: 2005

Rider Mb PP6

	<u>Billing Units</u>		<u>Revenues @ Present Rates</u>	
	Sch. PP3	Rider M(b)	Sch. PP3	Rider M(b)
Billing Load Per Month:				
Curtailable Load		325.2		
Billing kW	1,411.8	1,167.9		
kWh Per Month	755,800	755,800		
On-Peak kWh		0		
Off-Peak kWh		0		
Power Factor	90	90		
kVarhr Per Month	367,400	367,400		
<u>Energy Charge:</u>				
0 - 200 kWh/kW	282,360	233,580	\$19,967	\$16,518
201 - 400 kWh/kW	282,360	233,580	\$17,756	\$14,688
>400 kWh/kW	191,080	288,640	\$11,436	\$17,275
Subtotal	755,800	755,800	\$49,159	\$48,481
On-Peak Surcharge		0		\$0
Off-Peak Credit		0		\$0
Rider T Energy Charge Adjustment		0		\$0
<u>Demand Charge:</u>				
0 - 500 kWb	500.0	500.0	\$4,905	\$4,905
501 - 1500 kWb	911.8	667.9	\$8,498	\$6,225
>1500 kWb	0.0	0.0	\$0	\$0
Subtotal	1,411.8	1,167.9	\$13,403	\$11,130
Customer Charge			\$320	\$320
Time-of-Day Metering Charge				\$10
Power Factor Adjustment			(\$313)	(\$298)
kVarhr Charge			\$0	\$0
Total Base Revenue Per Month			\$62,569	\$59,643
Fuel Oil Adjustment			\$0	\$0
Rate Adjustment (AES Refund)			\$0	\$0
IRP Adjustment			\$0	\$0
DSM Adjustment			\$0	\$0
Total Revenue Per Month			\$62,569	\$59,643
Total Revenue Per Year (\$000s)			\$750.8	\$715.7
Rider Adjustment (\$000s/Yr)				(\$35.1)

Hawaiian Electric Company, Inc.
Schedule PP - Large Power Primary Voltage Service
Based On Docket No. 04-0113 Test Year: 2005

Rider Mb PP7

	<u>Billing Units</u>		<u>Revenues @ Present Rates</u>	
	Sch. PP3	Rider M(b)	Sch. PP3	Rider M(b)
Billing Load Per Month:				
Curtailable Load		939.0		
Billing kW	4,114.7	3,410.4		
kWh Per Month	1,972,800	1,972,800		
On-Peak kWh		0		
Off-Peak kWh		0		
Power Factor	96	96		
kVarhr Per Month	96,550	96,550		
<u>Energy Charge:</u>				
0 - 200 kWh/kW	822,940	682,080	\$58,194	\$48,233
201 - 400 kWh/kW	822,940	682,080	\$51,750	\$42,892
>400 kWh/kW	326,920	608,640	\$19,566	\$36,426
Subtotal	1,972,800	1,972,800	\$129,510	\$127,551
On-Peak Surcharge		0		\$0
Off-Peak Credit		0		\$0
Rider T Energy Charge Adjustment		0		\$0
<u>Demand Charge:</u>				
0 - 500 kWb	500.0	500.0	\$4,905	\$4,905
501 - 1500 kWb	1,000.0	1,000.0	\$9,320	\$9,320
>1500 kWb	2,614.7	1,910.4	\$21,807	\$15,933
Subtotal	4,114.7	3,410.4	\$36,032	\$30,158
Customer Charge			\$320	\$320
Time-of-Day Metering Charge				\$10
Power Factor Adjustment			(\$1,821)	(\$1,735)
kVarhr Charge			\$0	\$0
Total Base Revenue Per Month			\$164,041	\$156,304
Fuel Oil Adjustment			\$0	\$0
Rate Adjustment (AES Refund)			\$0	\$0
IRP Adjustment			\$0	\$0
DSM Adjustment			\$0	\$0
Total Revenue Per Month			\$164,041	\$156,304
Total Revenue Per Year (\$000s)			\$1,968.5	\$1,875.6
Rider Adjustment (\$000s/Yr)				(\$92.9)

Hawaiian Electric Company, Inc.
Schedule PP - Large Power Primary Voltage Service
Based On Docket No. 04-0113 Test Year: 2005

Rider Mb PP8

	<u>Billing Units</u>		<u>Revenues @ Present Rates</u>	
	Sch. PP3	Rider M(b)	Sch. PP3	Rider M(b)
Billing Load Per Month:				
Curtailable Load		943.2		
Billing kW	5,625.6	4,918.2		
kWh Per Month	3,254,400	3,254,400		
On-Peak kWh		0		
Off-Peak kWh		0		
Power Factor	99	99		
kVarhr Per Month	140,600	140,600		
<u>Energy Charge:</u>				
0 - 200 kWh/kW	1,125,120	983,640	\$79,563	\$69,558
201 - 400 kWh/kW	1,125,120	983,640	\$70,752	\$61,855
>400 kWh/kW	1,004,160	1,287,120	\$60,098	\$77,033
Subtotal	3,254,400	3,254,400	\$210,413	\$208,446
On-Peak Surcharge		0		\$0
Off-Peak Credit		0		\$0
Rider T Energy Charge Adjustment		0		\$0
<u>Demand Charge:</u>				
0 - 500 kWb	500.0	500.0	\$4,905	\$4,905
501 - 1500 kWb	1,000.0	1,000.0	\$9,320	\$9,320
>1500 kWb	4,125.6	3,418.2	\$34,408	\$28,508
Subtotal	5,625.6	4,918.2	\$48,633	\$42,733
Customer Charge			\$320	\$320
Time-of-Day Metering Charge				\$10
Power Factor Adjustment			(\$3,627)	(\$3,517)
kVarhr Charge			\$0	\$0
Total Base Revenue Per Month			\$255,739	\$247,992
Fuel Oil Adjustment			\$0	\$0
Rate Adjustment (AES Refund)			\$0	\$0
IRP Adjustment			\$0	\$0
DSM Adjustment			\$0	\$0
Total Revenue Per Month			\$255,739	\$247,992
Total Revenue Per Year (\$000s)			\$3,068.9	\$2,975.9
Rider Adjustment (\$000s/Yr)				(\$93.0)

Hawaiian Electric Company, Inc.
Schedule PP - Large Power Primary Voltage Service
Based On Docket No. 04-0113 Test Year: 2005

Rider I PP1

	<u>Billing Units</u>		<u>Revenues @ Present Rates</u>	
	Sch. PP3	Rider I	Sch. PP3	Rider I
Billing Load Per Month:				
Curtailable Load				
Billing kW	1,257.0	1,036.8		
kWh Per Month	760,100	760,100		
On-Peak kWh		0		
Off-Peak kWh		0		
Power Factor	94	94		
kVarhr Per Month	284,100	284,100		
<u>Energy Charge:</u>				
0 - 200 kWh/kW	251,400	207,360	\$17,778	\$14,663
201 - 400 kWh/kW	251,400	207,360	\$15,809	\$13,040
>400 kWh/kW	257,300	345,380	\$15,399	\$20,671
Subtotal	760,100	760,100	\$48,986	\$48,374
On-Peak Surcharge		0		\$0
Off-Peak Credit		0		\$0
Rider T Energy Charge Adjustment		0		\$0
<u>Demand Charge:</u>				
0 - 500 kWb	500.0	500.0	\$4,905	\$4,905
501 - 1500 kWb	757.0	536.8	\$7,055	\$5,003
>1500 kWb	0.0	0.0	\$0	\$0
Subtotal	1,257.0	1,036.8	\$11,960	\$9,908
Customer Charge			\$320	\$320
Time-of-Day Metering Charge				
Power Factor Adjustment			(\$549)	(\$525)
kVarhr Charge			\$0	\$0
Total Base Revenue Per Month			\$60,717	\$58,077
Fuel Oil Adjustment			\$0	\$0
Rate Adjustment (AES Refund)			\$0	\$0
IRP Adjustment			\$0	\$0
DSM Adjustment			\$0	\$0
Total Revenue Per Month			\$60,717	\$58,077
Total Revenue Per Year (\$000s)			\$728.6	\$696.9
Rider Adjustment (\$000s/Yr)				(\$31.7)

Hawaiian Electric Company, Inc.
Schedule PP - Large Power Primary Voltage Service
Based On Docket No. 04-0113 Test Year: 2005

Rider I PP2

	<u>Billing Units</u>		<u>Revenues @ Present Rates</u>	
	Sch. PP3	Rider I	Sch. PP3	Rider I
Billing Load Per Month:				
Curtailable Load				
Billing kW	2,332.3	1,717.7		
kWh Per Month	912,600	912,600		
On-Peak kWh		0		
Off-Peak kWh		0		
Power Factor	86	86		
kVarhr Per Month	704,250	704,250		
<u>Energy Charge:</u>				
0 - 200 kWh/kW	466,460	343,540	\$32,986	\$24,293
201 - 400 kWh/kW	446,140	343,540	\$28,055	\$21,603
>400 kWh/kW	0	225,520	\$0	\$13,497
Subtotal	912,600	912,600	\$61,041	\$59,393
On-Peak Surcharge		0		\$0
Off-Peak Credit		0		\$0
Rider T Energy Charge Adjustment		0		\$0
<u>Demand Charge:</u>				
0 - 500 kWb	500.0	500.0	\$4,905	\$4,905
501 - 1500 kWb	1,000.0	1,000.0	\$9,320	\$9,320
>1500 kWb	832.3	217.7	\$6,941	\$1,816
Subtotal	2,332.3	1,717.7	\$21,166	\$16,041
Customer Charge			\$320	\$320
Time-of-Day Metering Charge				
Power Factor Adjustment			(\$82)	(\$75)
kVarhr Charge			\$0	\$0
Total Base Revenue Per Month			\$82,445	\$75,679
Fuel Oil Adjustment			\$0	\$0
Rate Adjustment (AES Refund)			\$0	\$0
IRP Adjustment			\$0	\$0
DSM Adjustment			\$0	\$0
Total Revenue Per Month			\$82,445	\$75,679
Total Revenue Per Year (\$000s)			\$989.3	\$908.1
Rider Adjustment (\$000s/Yr)				(\$81.2)

Hawaiian Electric Company, Inc.
Schedule PP - Large Power Primary Voltage Service
Based On Docket No. 04-0113 Test Year: 2005

RiderMult PP1

	<u>Billing Units</u>		<u>Revenues @ Present Rates</u>	
	Sch. PP3	Rider M(a&b)	Sch. PP3	Rider M(a&b)
Billing Load Per Month:				
Curtailable Load				
Billing kW	395.7	385.1		
kWh Per Month	134,662	134,662		
On-Peak kWh		0		
Off-Peak kWh		0		
Power Factor	96	96		
kVarhr Per Month	72,236	72,236		
<u>Energy Charge:</u>				
0 - 200 kWh/kW	79,140	77,020	\$5,596	\$5,446
201 - 400 kWh/kW	55,522	57,642	\$3,491	\$3,625
>400 kWh/kW	0	0	\$0	\$0
Subtotal	134,662	134,662	\$9,087	\$9,071
On-Peak Surcharge		0		\$0
Off-Peak Credit		0		\$0
Rider T Energy Charge Adjustment		0		\$0
<u>Demand Charge:</u>				
0 - 500 kWb	395.7	385.1	\$3,882	\$3,778
501 - 1500 kWb	0.0	0.0	\$0	\$0
>1500 kWb	0.0	0.0	\$0	\$0
Subtotal	395.7	385.1	\$3,882	\$3,778
Customer Charge			\$320	\$320
Time-of-Day Metering Charge				\$10
Power Factor Adjustment			(\$143)	(\$141)
kVarhr Charge			\$0	\$0
Total Base Revenue Per Month			\$13,146	\$13,038
Fuel Oil Adjustment			\$0	\$0
Rate Adjustment (AES Refund)			\$0	\$0
IRP Adjustment			\$0	\$0
DSM Adjustment			\$0	\$0
Total Revenue Per Month			\$13,146	\$13,038
Total Revenue Per Year (\$000s)			\$157.8	\$156.5
Rider Adjustment (\$000s/Yr)				(\$1.3)

Hawaiian Electric Company, Inc.
Schedule PP - Large Power Primary Voltage Service
Based On Docket No. 04-0113 Test Year: 2005

RiderMult PP2

	<u>Billing Units</u>		<u>Revenues @ Present Rates</u>	
	Sch. PP3	Riders M(b)&I	Sch. PP3	Riders M(b)&I
Billing Load Per Month:				
Curtailable Load				
Billing kW	2,011.1	1,474.0		
kWh Per Month	1,187,550	1,187,550		
On-Peak kWh		0		
Off-Peak kWh		0		
Power Factor	90	90		
kVarhr Per Month	593,100	593,100		
<u>Energy Charge:</u>				
0 - 200 kWh/kW	402,220	294,800	\$28,443	\$20,847
201 - 400 kWh/kW	402,220	294,800	\$25,293	\$18,538
>400 kWh/kW	383,110	597,950	\$22,929	\$35,787
Subtotal	1,187,550	1,187,550	\$76,665	\$75,172
On-Peak Surcharge		0		\$0
Off-Peak Credit		0		\$0
Rider T Energy Charge Adjustment		0		\$0
<u>Demand Charge:</u>				
0 - 500 kWb	500.0	500.0	\$4,905	\$4,905
501 - 1500 kWb	1,000.0	974.0	\$9,320	\$9,078
>1500 kWb	511.1	0.0	\$4,263	\$0
Subtotal	2,011.1	1,474.0	\$18,488	\$13,983
Customer Charge			\$320	\$320
Time-of-Day Metering Charge				\$10
Power Factor Adjustment			(\$476)	(\$446)
kVarhr Charge			\$0	\$0
Total Base Revenue Per Month			\$94,997	\$89,039
Fuel Oil Adjustment			\$0	\$0
Rate Adjustment (AES Refund)			\$0	\$0
IRP Adjustment			\$0	\$0
DSM Adjustment			\$0	\$0
Total Revenue Per Month			\$94,997	\$89,039
Total Revenue Per Year (\$000s)			\$1,140.0	\$1,068.5
Rider Adjustment (\$000s/Yr)				(\$71.5)

HAWAIIAN ELECTRIC COMPANY, INC.
SCHEDULE PT - LARGE POWER TRANSMISSION VOLTAGE SERVICE
DOCKET NO. 04-0113 TEST-YEAR: 2005

ESTIMATE OF TEST-YEAR REVENUES

<u>PRESENT RATES</u>			
	<u>BILLING UNITS</u>	<u>UNIT PRICE</u>	<u>REVENUES \$1000S</u>
<u>ENERGY CHARGE:</u>	<u>(MWH)</u>	<u>¢/kWH</u>	
0 - 200 KWH/KW	55,137	6.9708	\$3,843.5
201 - 400 KWH/KW	52,510	6.1989	\$3,255.0
> 400 KWH/KW	<u>67,514</u>	5.8997	<u>\$3,983.1</u>
SUBTOTAL	175,161		\$11,081.6
<u>DEMAND CHARGE:</u>	<u>(kW)</u>	<u>\$/kW</u>	
0 - 500 KW	22,748	9.67	\$220.0
501 - 1500 KW	39,496	9.19	\$363.0
> 1500 KW	<u>222,107</u>	8.22	<u>\$1,825.7</u>
SUBTOTAL	284,351		\$2,408.7
	<u>BILLS</u>	<u>\$/month</u>	
<u>CUSTOMER CHARGE:</u>	47	320.00	\$15.0
<u>ADJUSTMENTS:</u>			
MISCELLANEOUS **			(\$188.9)
Fuel Oil Adjustment	¢/kWH	7.299	\$12,785.0
Rate Adjustment (AES Refund):	%	-0.406%	<u>(\$54.1)</u>
TOTAL REVENUES			\$26,047.3
INTERIM RATE INCREASE REVENUES			\$0.0
TOTAL REVENUE AT CURRENT EFFECTIVE RATES			<u>\$26,047.3</u>

HAWAIIAN ELECTRIC COMPANY, INC.
SCHEDULE PT - LARGE POWER TRANSMISSION VOLTAGE SERVICE
DOCKET NO. 04-0113 TEST-YEAR: 2005

DISTRIBUTION OF SALES & BILLS
BY VOLTAGE SUPPLY SERVICE

<u>RECORDED:</u>	<u>NUMBER OF BILLS</u>	<u>PERCENT OF TOTAL</u>	<u>MWH SALES</u>	<u>PERCENT OF TOTAL</u>	<u>GVARH</u>
PT1	48	1.1	176,509	5.7	24.918397
PT2	-	0.0	0	0.0	0.000000
PP3	1,845	43.2	2,043,078	66.4	564.711787
PP4	89	2.1	20,902	0.7	5.168016
PS5	190	4.4	154,413	5.0	43.961400
PS	<u>2,103</u>	<u>49.2</u>	<u>680,486</u>	<u>22.2</u>	<u>272.886220</u>
TOTAL	4,275	100.0	3,075,389	100.0	911.645820

<u>FORECASTS:</u>	<u>PERCENT OF TOTAL</u>	<u>NUMBER OF BILLS</u>	<u>PERCENT OF TOTAL</u>	<u>MWH SALES</u>
PT1	1.1	47	5.7	175,161
PT2	0.0	-	0.0	0
PP3	43.2	1,856	66.4	2,040,472
PP4	2.1	90	0.7	21,511
PS5	4.4	189	5.0	153,650
PS	<u>49.2</u>	<u>2,114</u>	<u>22.2</u>	<u>682,206</u>
TOTAL	100.0	4,296	100.0	3,073,000

HAWAIIAN ELECTRIC COMPANY, INC.
SCHEDULE PT - LARGE POWER TRANSMISSION VOLTAGE SERVICE
DOCKET NO. 04-0113 TEST-YEAR: 2005

DETERMINATION OF TEST-YEAR BILLING KW
BY VOLTAGE SUPPLY SERVICE

<u>TYPE OF CUSTOMERS:</u>	<u>RECORDED</u>		<u>FORECASTS</u>	
	<u>KW</u>	<u>KWH/KW</u>	<u>KW</u>	<u>KWH/KW</u>
PT1	286,539	616.00	284,352	616.00
PT2	-	-	-	-
PP3	4,126,052	495.17	4,120,750	495.17
PP4	41,061	509.06	42,256	509.06
PS5	401,830	384.28	399,839	384.28
PS	<u>1,478,133</u>	<u>460.37</u>	<u>1,481,865</u>	<u>460.37</u>
TOTAL	6,333,615.3	485.57	6,329,062	485.57

HAWAIIAN ELECTRIC COMPANY, INC.
SCHEDULE PT - LARGE POWER TRANSMISSION VOLTAGE SERVICE
DOCKET NO. 04-0113 TEST-YEAR: 2005

DETERMINATION OF TEST-YEAR BILLING LOADS
FOR SCHEDULE PT1 CUSTOMERS

	<u>RECORDED</u>		<u>FORECASTS</u>	
	<u>MWH</u>	<u>% OF TOTAL</u>	<u>MWH</u>	<u>% OF TOTAL</u>
<u>SALES, MWH</u>				
0 - 200 KWH/KW	2,222.1	1.26	2,207	1.26
201 - 400 KWH/KW	19,560.7	11.08	19,408	11.08
> 400 KWH/KW	<u>154,726.2</u>	<u>87.66</u>	<u>153,546</u>	<u>87.66</u>
TOTAL	176,509.0	100.00	175,161	100.00
 <u>KW BILLED</u>				
	<u>KW</u>	<u>KWH/KW</u>	<u>KW</u>	
0 - 200 KWH/KW	19,836.3	112.02	19,702	
201 - 400 KWH/KW	49,960.8	391.52	49,571	
> 400 KWH/KW	<u>216,742.1</u>	<u>713.87</u>	<u>215,079</u>	
TOTAL	286,539.2	616.00	284,352	

HAWAIIAN ELECTRIC COMPANY, INC.
SCHEDULE PT - LARGE POWER TRANSMISSION VOLTAGE SERVICE
DOCKET NO. 04-0113 TEST-YEAR: 2005

DETERMINATION OF TEST-YEAR BILLING LOADS
FOR SCHEDULE PT1 CUSTOMERS

	<u>LOAD FACTOR BLOCKS (KWH/KW)</u>			
	<u>0 -200</u>	<u>201 - 400</u>	<u>> 400</u>	<u>TOTAL</u>
0 - 200 KWH/KW	2,207	9,914	43,016	55,137
201 - 400 KWH/KW	-	9,494	43,016	52,510
> 400 KWH/KW	-	-	67,514	67,514
SUBTOTAL	2,207	19,408	153,546	175,161
<u>FORECASTS:</u>				
SALES, MWH	2,207	19,408	153,546	175,161
KW	19,702	49,571	215,079	284,352

HAWAIIAN ELECTRIC COMPANY, INC.
SCHEDULE PT - LARGE POWER TRANSMISSION VOLTAGE SERVICE
DOCKET NO. 04-0113 TEST-YEAR: 2005

DETERMINATION OF TEST-YEAR BILLING LOADS
FOR SCHEDULE PT1 CUSTOMERS

	UPPER LIM. OF BLK. AS % OF AVE. <u>USE/BILL</u>	CUM UNIT @ EA. UPPER LIM. AS % <u>OF TOTAL</u>	% UNITS BILLED IN <u>EA. BLOCK</u>	UNITS BILLED IN <u>EA. BLOCK</u>
<u>DEMAND CHARGE:</u>				
0 - 500 KW	8.26	8.00	8.00	22,748
501 - 1500 KW	24.79	21.89	13.89	39,496
> 1500 KW		100.0	78.11	222,107
TOTAL			100.00	284,352
<u>ENERGY CHARGE:</u>				
0 - 200 KWH/KW				55,137
201 - 400 KWH/KW				52,510
> 400 KWH/KW				67,514
TOTAL				175,161
<u>FORECASTS:</u>				
SALES, MWH	175,161			
BILLS	47			
KW	284,352			
KWH/BILL	3,726,830			
KW/BILL	6,050			

HAWAIIAN ELECTRIC COMPANY, INC.
DOCKET NO. 04-0113 TEST-YEAR: 2005
SCHEDULE PT - LARGE POWER TRANSMISSION VOLTAGE SERVICE

DETERMINATION OF POWER FACTOR ADJUSTMENT

	Recorded
KWH	176508964
KVARHR	24918397
POWER FACTOR	99.0182
	<u>Present Rates</u>
CALCULATED PF (%)	99
BASE PF (%)	<u>85</u>
DIFFERENCE	(14.0)
ADJ. FOR EA. 1% DIFF.	0.001
PF ADJUSTMENT RATE	(0.014)
TOTAL DMD/ENERGY CHARGES	\$13,490.3
POWER FACTOR ADJ.	(\$188.9)

HAWAIIAN ELECTRIC COMPANY, INC.
SCHEDULE PT - LARGE POWER TRANSMISSION VOLTAGE SERVICE
DOCKET NO. 04-0113 TEST-YEAR: 2005

ESTIMATE OF TEST-YEAR REVENUES

	<u>PRESENT RATES</u>		
	<u>BILLING UNITS</u>	<u>UNIT PRICE</u>	<u>REVENUES \$1000S</u>
<u>ENERGY CHARGE:</u>	<u>(MWH)</u>	<u>¢/kWH</u>	
0 - 200 KWH/KW	55,137	6.9708	\$3,843.5
201 - 400 KWH/KW	52,510	6.1989	\$3,255.0
> 400 KWH/KW	67,514	5.8997	\$3,983.1
SUBTOTAL	175,161		\$11,081.6
<u>DEMAND CHARGE:</u>	<u>(kW)</u>	<u>\$/kW</u>	
0 - 500 KW	22,748	9.67	\$220.0
501 - 1500 KW	39,496	9.19	\$363.0
> 1500 KW	222,107	8.22	\$1,825.7
SUBTOTAL	284,351		\$2,408.7
	<u>BILLS</u>	<u>\$/month</u>	
<u>CUSTOMER CHARGE:</u>	47	320.00	\$15.0
<u>ADJUSTMENTS:</u>			
POWER FACTOR ADJ.			(\$188.9)
SECONDARY METERING ADJ.			\$0.0
Schedule E Adjustment			\$0.0
SUBTOTAL			(\$188.9)
UNADJUSTED BASE REVENUE			\$13,316.4
Fuel Oil Adjustment	¢/kWH	7.299	\$12,785.0
Rate Adjustment (AES Refund):	%	-0.406%	(\$54.1)
UNADJUSTED TOTAL REVENUE			\$26,047.3
<u>RATE RIDER & OTHER REVENUE ADJ.</u>			
RIDER M (B)			\$0.0
RIDER I			\$0.0
RIDER T			\$0.0
MULTIPLE RIDERS			\$0.0
RIDER EDR			\$0.0
SCHEDULE CHP			\$0.0
Total Rate Rider & Other Revenue Adjustments			\$0.0
TOTAL REVENUES			\$26,047.3

HAWAIIAN ELECTRIC COMPANY, INC.
Docket No. 2006-0386, Test-Year 2007
SCHEDULE F - PUBLIC STREET LIGHTING SERVICE
HIGHWAY LIGHTING, & PARK & PLAYGROUND FLOODLIGHTING

ESTIMATE OF TEST-YEAR REVENUES

<u>PRESENT RATES</u>			
	<u>BILLING UNITS</u>	<u>UNIT PRICE</u>	<u>REVENUES \$1000S</u>
<u>CUSTOMER CHARGE:</u>	<u>Bills</u>	<u>\$/month</u>	
Customers	5,244	0.00	\$0.0
<u>ENERGY CHARGE:</u>	<u>MWH</u>	<u>¢/kWh</u>	
0 - 150 KWH/KW	17,464	12.7049	\$2,218.8
> 150 KWH/KW	20,336	8.7309	\$1,775.5
SUBTOTAL	<u>37,800</u>		<u>\$3,994.3</u>
<u>ADJUSTMENTS:</u>			
MISCELLANEOUS **			\$14.4
FUEL OIL ADJUSTMENT:		7.299 ¢/kWh	\$2,759.0
RATE ADJUSTMENT (AES REFUND):		(0.406) (%)	(\$16.3)
TOTAL REVENUES			<u>\$6,751.4</u>
INTERIM RATE INCREASE REVENUES			\$374.0
TOTAL REVENUE AT CURRENT EFFECTIVE RATES			<u>\$7,125.4</u>

HAWAIIAN ELECTRIC COMPANY, INC.
Docket No. 2006-0386, Test-Year 2007
SCHEDULE F - PUBLIC STREET LIGHTING SERVICE
HIGHWAY LIGHTING, & PARK & PLAYGROUND FLOODLIGHTING

DETERMINATION OF TEST-YEAR BILLING LOADS

<u>TOTAL F</u>	<u>RECORDED</u>	<u>FORECASTS</u>
SALES, MWH	33,339.6	37,800
BILLED KW	107,888.3	122,322
KWH/KW	309.02	309.02
NUMBER OF BILLS	4,848	5,244
 <u>SECONDARY METERING</u> (with % surcharge)		
SALES, MWH	5,754.4	6,539
% OF TOTAL	17.3	17.3
BILLED KW	17,431.3	19,808
KWH/KW	330.12	330.12
NUMBER OF BILLS	930	1,007
% OF TOTAL	19.2	19.2

HAWAIIAN ELECTRIC COMPANY, INC.
Docket No. 2006-0386, Test-Year 2007
SCHEDULE F - PUBLIC STREET LIGHTING SERVICE
HIGHWAY LIGHTING, & PARK & PLAYGROUND FLOODLIGHTING

DETERMINATION OF TEST-YEAR BILLING LOADS

<u>BILLING BLOCKS:</u>	CUM AT EA. UPPER LIMIT AS % <u>OF TOTAL</u>	PERCENT OF UNITS BILLED IN EACH <u>BLOCK</u>	MWH BILLED IN EACH <u>BLOCK</u>
0 - 150 KWH/KW	46.2	46.2	17,464
> 150 KWH/KW	<u>100.0</u>	<u>53.8</u>	<u>20,336</u>
TOTAL		100.0	37,800

SECONDARY METERING:

0 - 150 KWH/KW	43.9	43.9	2,871
> 150 KWH/KW	<u>100.0</u>	<u>56.1</u>	<u>3,668</u>
TOTAL		100.0	6,539

HAWAIIAN ELECTRIC COMPANY, INC.
Docket No. 2006-0386, Test-Year 2007
SCHEDULE F - PUBLIC STREET LIGHTING SERVICE
HIGHWAY LIGHTING, & PARK & PLAYGROUND FLOODLIGHTING

DETERMINATION OF TEST-YEAR BILLING LOADS
FOR MINIMUM CHARGE PROVISION

	<u>PRESENT RATES</u>	<u>PROPOSED RATES</u>
MIN CHRG less Cust CHRG.,\$/MO.	35.00	15.00
BASE ENERGY ,\$/KWH	0.127049	0.188659
F.O.A., \$/KWH	0.07299	0.00000
MINIMUM KWH/MO.	174.97	79.51

PRESENT RATES

	<u>RECORDED</u>	<u>FORECAST</u>
<u>SALES, MWH</u>		
TOTAL F	33,340	37,800
LT/EQ TO MIN. KWH	5.243	6.0
% OF TOTAL	0.016	0.016

NUMBER OF BILLS

TOTAL F	4,848	5,244
LT/EQ TO MIN. KWH	50	54
% OF TOTAL	1.031	1.031

HAWAIIAN ELECTRIC COMPANY, INC.
Docket No. 2006-0386, Test-Year 2007
SCHEDULE F - PUBLIC STREET LIGHTING SERVICE
HIGHWAY LIGHTING, & PARK & PLAYGROUND FLOODLIGHTING

ESTIMATE OF TEST-YEAR REVENUE ADJUSTMENTS
FOR MINIMUM CHARGE PROVISION

<u>PRESENT RATES</u>			
	<u>UNITS BILLED</u>	<u>UNIT PRICE</u>	<u>REVENUES \$1000S</u>
IF NO PROVISION FOR MINIMUM CHRG.:	<u>(MWH)</u>	<u>c/kWh</u>	
BASE ENERGY CHARGE	6.0	12.7049	\$0.8
FUEL OIL ADJUSTMENT:	6.0	7.299	<u>\$0.4</u>
TOTAL, IF NO MIN CHRG.			\$1.2
	<u>BILLS</u>	<u>\$/Month</u>	
AS BILLED WITH MINIMUM CHARGE:	54	35.00	<u>\$1.9</u>
MINIMUM BILL ADJ.:			\$0.7

HAWAIIAN ELECTRIC COMPANY, INC.
Docket No. 2006-0386, Test-Year 2007
SCHEDULE F - PUBLIC STREET LIGHTING SERVICE
HIGHWAY LIGHTING, & PARK & PLAYGROUND FLOODLIGHTING

ESTIMATES OF TEST-YEAR REVENUE ADJUSTMENTS
FOR SECONDARY METERING

		<u>PRESENT RATES</u>	
ENERGY REVENUES	<u>UNITS BILLED (MWH)</u>	<u>UNIT PRICE CENTS/KWH</u>	<u>REVENUES \$1000S</u>
ENERGY CHARGE:			
0 - 150 KWH/KW	2,871	12.7049	\$364.8
> 150 KWH/KW	<u>3,668</u>	8.7309	<u>\$320.2</u>
SUBTOTAL	6,539		\$685.0
TOTAL ENERGY REVENUES			<u>\$685.0</u>
SEC. METERING % ADJUSTMENT:		2.0%	\$13.7

HAWAIIAN ELECTRIC COMPANY, INC.
Docket No. 2006-0386, Test-Year 2007
SCHEDULE F - PUBLIC STREET LIGHTING SERVICE
HIGHWAY LIGHTING, & PARK & PLAYGROUND FLOODLIGHTING

ESTIMATE OF TEST-YEAR REVENUES

	<u>PRESENT RATES</u>		
	<u>BILLING UNITS</u>	<u>UNIT PRICE</u>	<u>REVENUES \$1000S</u>
<u>CUSTOMER CHARGE:</u>	<u>Bills</u>	<u>\$/month</u>	
Customers	5,244	0.00	\$0.0
<u>ENERGY CHARGE:</u>	<u>MWH</u>	<u>¢/kWh</u>	
0 - 150 KWH/KW	17,464	12.7049	\$2,218.8
> 150 KWH/KW	20,336	8.7309	\$1,775.5
SUBTOTAL	37,800		\$3,994.3
<u>ADJUSTMENTS:</u>			
MINIMUM BILL			\$0.7
SCHEDULE E ADJUSTMENT			\$0.0
SECONDARY METERING ADJUSTMENT:			\$13.7
SUBTOTAL			\$14.4
<u>UNADJUSTED BASE REVENUE:</u>			\$4,008.7
FUEL OIL ADJUSTMENT:		7.299 ¢/kWh	\$2,759.0
RATE ADJUSTMENT (AES REFUND):		(0.406) (%)	(\$16.3)
<u>UNADJUSTED TOTAL REVENUE</u>			\$6,751.4
RIDER ADJUSTMENTS			\$0.0
TOTAL REVENUES			\$6,751.4

Index of Workpapers for HECO Rate Case - Direct Testimony
TEST YEAR 2007

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HECO - WP - 404	2	2005 Actual MBTU Consumption & MWh Generation
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Hawaiian Electric Company, Inc.

TEST YEAR 2007 COMPANY USE

Line	Year	(A)	(B)	(C) = (A) ÷ (B)
		Company No-Charge (MWh)	Sales (MWh)	(C) Company Use (Percent)
1.	2001	15,541	7,276,681	0.214%
2.	2002	15,379	7,390,367	0.208%
3.	2003	15,002	7,522,230	0.199%
4.	2004	15,521	7,732,834	0.201%
5.	2005	15,698	7,721,296	0.203%
6.	Total	77,140	37,643,407	0.205%
7.	Average	15,428		

Hawaiian Electric Company, Inc.

TEST YEAR 2007 UNACCOUNTED FOR & SYSTEM LOSSES

Line	Year	(A)	(B)	(C) = (A) ÷ (B)
		Unacct'd & Sys Losses (MWh)	Net-to-System (MWh)	(C) System Losses (Percent)
1.	2001	351,066	7,643,288	4.59%
2.	2002	351,953	7,757,699	4.54%
3.	2003	371,726	7,908,957	4.70%
4.	2004	378,644	8,126,998	4.66%
5.	2005	366,811	8,103,805	4.53%
6.	Total	1,820,199	39,540,746	4.60%

Hawaiian Electric Company, Inc.
2005 Production Simulation - (Calibration Run)
Sales and Peak - Actual
Maintenance Schedule - Actual
Fuel Prices - Actual

Month	Mbtu Consumption					Net MWh Generation					Net Heat Rate
	<u>Kahe</u>	<u>Waiau</u>	<u>Honolulu</u>	<u>Diesel</u>	<u>Total</u>	<u>Kahe</u>	<u>Waiau</u>	<u>Honolulu</u>	<u>Diesel</u>	<u>Total</u>	
Jan	2,560,712	1,036,491	194,258	18,154	3,809,615	250,748	92,783	14,458	871	358,860	10,616
Feb	2,568,071	676,482	117,509	4,213	3,366,275	253,252	63,005	8,923	207	325,387	10,345
Mar	2,915,724	630,608	174,530	9,698	3,730,560	288,215	57,509	13,458	486	359,668	10,372
Apr	3,185,833	1,033,639	145,402	44,302	4,409,176	317,721	91,438	11,377	2,333	422,869	10,427
May	2,750,698	1,394,671	217,843	80,112	4,443,325	276,183	124,842	17,208	4,247	422,480	10,517
Jun	2,523,003	1,257,434	196,875	63,581	4,040,893	252,749	112,355	15,511	3,342	383,957	10,524
Jul	2,763,768	1,367,633	174,536	51,193	4,357,130	275,099	121,922	13,697	2,631	413,349	10,541
Aug	3,102,120	1,408,175	181,344	58,647	4,750,286	307,559	125,693	14,357	3,002	450,611	10,542
Sep	3,062,192	1,231,221	144,888	28,568	4,466,869	305,560	110,376	11,353	1,427	428,716	10,419
Oct	2,846,910	1,301,721	163,159	38,864	4,350,654	283,866	116,420	12,775	2,073	415,134	10,480
Nov	2,626,661	1,178,453	124,626	19,432	3,949,172	261,290	105,179	9,629	992	377,090	10,473
Dec	2,790,223	1,091,082	78,945	22,409	3,982,659	275,405	96,557	6,041	1,114	379,117	10,505
Total	33,695,915	13,607,611	1,913,915	439,172	49,656,613	3,347,647	1,218,079	148,787	22,725	4,737,238	10,482
Simulated	10,066	11,171	12,863	19,325	10,482	70.7%	25.7%	3.1%	0.5%	100.0%	
Actual	10,210	11,354	12,505	20,985	10,690	67.9%	27.4%	4.1%	0.7%	100.0%	
Factor	1.0144	1.0164	0.9721	1.0859	1.0199						

Hawaiian Electric Company, Inc.
2005 Actual MBtu Consumption and MWh Generation

Month	<u>Mbtu Consumption</u>					<u>Net MWh Generation</u>					Net Heat Rate
	<u>Kahe</u>	<u>Waiau</u>	<u>Honolulu</u>	<u>Diesel</u>	<u>Total</u>	<u>Kahe</u>	<u>Waiau</u>	<u>Honolulu</u>	<u>Diesel</u>	<u>Total</u>	
Jan	2,510,211	1,207,279	155,586	32,753	3,905,829	246,206	108,109	11,725	1,502	367,542	10,627
Feb	2,510,307	728,195	61,876	6,074	3,306,451	246,421	67,071	4,234	248	317,974	10,399
Mar	2,738,933	709,226	155,405	14,256	3,617,819	269,224	63,621	11,789	615	345,248	10,479
Apr	3,041,968	1,149,362	148,885	60,131	4,400,346	300,593	100,832	12,094	2,794	416,313	10,570
May	2,556,147	1,546,458	203,388	83,644	4,389,637	252,074	137,106	16,502	3,988	409,669	10,715
Jun	2,472,518	1,433,510	229,045	68,885	4,203,959	242,931	126,697	18,540	3,352	391,519	10,738
Jul	2,716,958	1,484,170	210,685	67,457	4,479,269	264,033	129,971	16,818	3,078	413,900	10,822
Aug	2,909,281	1,598,016	268,389	107,511	4,883,197	278,857	141,436	21,541	5,289	447,123	10,921
Sep	2,865,862	1,456,278	244,594	43,724	4,610,457	280,378	128,463	19,596	2,028	430,466	10,710
Oct	2,966,411	1,155,133	241,022	36,372	4,398,937	291,978	100,547	19,515	1,701	413,741	10,632
Nov	2,465,846	1,240,025	309,933	111,847	4,127,651	242,261	107,307	25,618	5,565	380,751	10,841
Dec	2,962,869	966,008	170,871	45,657	4,145,405	289,385	81,210	13,927	2,164	386,685	10,720
Total	32,717,311	14,673,660	2,399,678	678,309	50,468,959	3,204,338	1,292,370	191,898	32,324	4,720,930	10,690
	10,210	11,354	12,505	20,985	10,690	67.9%	27.4%	4.1%	0.7%	100.0%	

Hawaiian Electric Company, Inc.
IPP Simulated and Actual 2005 MWh Generation

Month	<u>AES</u>			<u>KPLP</u>		
	<u>Simulated</u>	<u>Actual</u>	<u>Diff.</u>	<u>Simulated</u>	<u>Actual</u>	<u>Diff.</u>
Jan	133,013	126,998	6,015	134,717	132,671	2,046
Feb	119,854	115,910	3,944	105,021	117,345	(12,324)
Mar	133,204	130,540	2,664	117,686	134,951	(17,265)
Apr	128,779	128,551	228	81,927	88,895	(6,968)
May	132,624	133,309	(685)	124,565	135,991	(11,426)
Jun	128,822	129,136	(314)	136,144	127,803	8,341
Jul	133,186	133,517	(331)	137,202	136,243	959
Aug	133,013	130,552	2,461	130,934	136,645	(5,711)
Sep	127,872	122,935	4,937	127,689	131,042	(3,353)
Oct	133,488	134,006	(518)	131,451	133,895	(2,444)
Nov	128,606	129,390	(784)	134,402	132,524	1,878
Dec	132,863	132,976	(113)	134,971	130,078	4,893
Total	1,565,324	1,547,821	17,503	1,496,709	1,538,082	-41,373

Hawaiian Electric Company, Inc.
IPP Simulated and Actual 2005 MWh Generation

Month	H-POWER and NonFirm		
	<u>Simulated</u>	<u>Actual</u>	<u>Diff.</u>
Jan	27,225	27,878	(653)
Feb	26,410	27,276	(866)
Mar	30,124	30,654	(530)
Apr	12,028	12,217	(189)
May	19,834	20,198	(364)
Jun	30,758	31,228	(470)
Jul	27,247	27,538	(291)
Aug	16,740	17,012	(272)
Sep	25,686	26,075	(389)
Oct	20,945	21,193	(248)
Nov	26,627	27,058	(431)
Dec	24,139	24,573	(434)
Total	287,763	292,899	-5,136

Hawaiian Electric Company, Inc.
2005 Production Simulation Calibration - (Unit Characteristics)

Unit	Heat Rate Coefficients			Actual Month Input Changed
	A	B	C	
H8	54.92906	10.16683	0.00774	10/09/98
H9	62.67367	9.40383	0.01947	07/18/96
W3	67.13639	8.19328	0.04362	04/23/98
W4	49.46043	9.31119	0.03203	04/23/98
W5	32.97369	10.73819	0.010479	01/23/02
W6	62.08097	8.697689	0.020946	11/07/01
W7	61.48035	8.647863	0.008956	04/17/03
W8	87.8064	7.6208	0.0188	11/24/03
W9	192.565	7.60753	0.02832	03/15/95
W10	194.6036	7.39761	0.02899	06/21/95
K1	50.084	8.813	0.0055	05/01/03
K2	66.70119	8.293533	0.01035	10/01/02
K3	103.624	7.084	0.01846	06/23/03
K4	82.465	7.95	0.01071	05/01/03
K5	148.6319	7.234	0.01145	11/24/03
K6	128.2775	8.03514	0.007435	10/05/01
H8	36.41316	10.31147	0.00568	02/03/05
H9	69.89196	8.94844	0.02204	02/03/05
W5	61.05946	8.81372	0.02981	02/03/05
W6	64.11038	8.74074	0.03199	02/03/05
W7	86.86392	7.81924	0.01931	02/03/05
W8	85.4702	7.96142	0.01293	02/03/05
K1	72.43287	8.05476	0.01273	02/03/05
K2	45.95472	9.08552	0.00349	02/03/05
K3	58.36784	8.64753	0.00643	02/03/05
K4	74.44585	8.31562	0.00728	02/03/05
K5	89.70052	8.67784	0.00306	02/03/05
K6	117.2715	8.1966	0.00771	02/03/05
W7	109.9839	6.94871	0.02412	04/28/05
W8	112.9479	6.89648	0.02464	05/05/05
K1	71.72702	8.18423	0.01215	05/05/05
K3	73.27848	8.02351	0.01095	05/05/05

**2005 FUEL PRICES
ECONOMIC DISPATCH**

	L.S.F.O. HONOLULU	L.S.F.O. WAIAU	L.S.F.O. KAHE	DIESEL WAIAU
MBtu per Barrel	6.2765	6.2765	6.2765	5.7819
Average Price per Barrel	44.5989	44.5989	44.5989	64.1654
Thruput	<u>0.7343</u>	<u>0.0322</u>	<u>0.0857</u>	_____
01/01/2005 Price	<u>45.3332</u>	<u>44.6311</u>	<u>44.6846</u>	<u>64.1654</u>
MBtu per Barrel	6.3023	6.3023	6.3023	5.7680
Average Price per Barrel	38.8290	38.8290	38.8290	63.2804
Thruput	<u>0.7838</u>	_____	_____	_____
02/01/2005 Price	<u>39.6128</u>	<u>38.8290</u>	<u>38.8290</u>	<u>63.2804</u>
MBtu per Barrel	6.2860	6.2860	6.2860	5.7626
Average Price per Barrel	36.9019	36.9019	36.9019	63.3737
Thruput	<u>0.6623</u>	_____	_____	_____
03/01/2005 Price	<u>37.5642</u>	<u>36.9019</u>	<u>36.9019</u>	<u>63.3737</u>
MBtu per Barrel	6.2763	6.2763	6.2763	5.7705
Average Price per Barrel	41.4401	41.4401	41.4401	63.4963
Thruput	0.8926	_____	_____	_____
*Trucking	<u>3.1911</u>	_____	_____	_____
04/01/2005 Price	<u>45.5238</u>	<u>41.4401</u>	<u>41.4401</u>	<u>63.4963</u>

MBtu per Barrel	6.3111	6.3111	6.3111	5.7722
Average Price per Barrel	46.4347	46.4347	46.4347	63.5334
Trucking contract price	<u>3.0548</u>	_____	_____	_____
05/01/2005 Price	<u>49.4895</u>	<u>46.4347</u>	<u>46.4347</u>	<u>63.5334</u>

MBtu per Barrel	6.3281	6.3281	6.3281	5.7744
Average Price per Barrel	53.2620	53.2620	53.2620	65.5032
Trucking contract price	<u>3.0550</u>	_____	_____	_____
06/01/2005 Price	<u>56.3170</u>	<u>53.2620</u>	<u>53.2620</u>	<u>65.5032</u>

MBtu per Barrel	6.3146	6.3146	6.3146	5.7910
Average Price per Barrel	54.0874	54.0874	54.0874	72.9541
Trucking contract price	<u>3.0550</u>	_____	_____	_____
07/01/2005 Price	<u>57.1424</u>	<u>54.0874</u>	<u>54.0874</u>	<u>72.9541</u>

MBtu per Barrel	6.2993	6.2993	6.2993	5.7970
Average Price per Barrel	53.5043	53.5043	53.5043	73.7876
Trucking	<u>3.0688</u>	_____	_____	_____
08/01/2005 Price	<u>56.5731</u>	<u>53.5043</u>	<u>53.5043</u>	<u>73.7876</u>

MBtu per Barrel	6.2811	6.2811	6.2811	5.7474
Average Price per Barrel	57.4463	57.4463	57.4463	78.3729
Trucking	<u>2.7700</u>	_____	_____	_____
09/01/2005 Price	<u>60.2163</u>	<u>57.4463</u>	<u>57.4463</u>	<u>78.3729</u>

MBtu per Barrel	6.2650	6.2650	6.2650	5.7570
Average Price per Barrel	59.7103	59.7103	59.7103	86.5200
Trucking	<u>2.9329</u>	_____	_____	_____
10/01/05 Price	<u>62.6432</u>	<u>59.7103</u>	<u>59.7103</u>	<u>86.5200</u>

MBtu per Barrel	6.3055	6.3055	6.3055	5.7840
Average Price per Barrel	62.4920	62.4920	62.4920	89.4220
Trucking	<u>3.0422</u>	_____	_____	_____
11/01/05 Price	<u>65.5342</u>	<u>62.4920</u>	<u>62.4920</u>	<u>89.4220</u>

MBtu per Barrel	6.3140	6.3140	6.3140	5.7997
Average Price per Barrel	62.3884	62.3884	62.3884	93.3074
Trucking	<u>3.5333</u>	_____	_____	_____
12/01/05 Price	<u>65.9217</u>	<u>62.3884</u>	<u>62.3884</u>	<u>93.3074</u>

	Kalaeloa LSFO	AES GNIPD
Jan	34.988	108.479
Feb	41.036	108.479
Mar	43.199	108.479
Apr	49.448	108.479
May	51.802	108.479
Jun	48.187	108.479
Jul	54.156	109.872
Aug	58.75	109.872
Sep	61.216	109.872
Oct	62.556	109.872
Nov	59.874	109.872
Dec	55.548	109.872

**HECO 2005 MAINTENANCE OUTAGES
CALIBRATION PRODUCTION SIMULATION**

<u>Unit</u>	<u>Type</u>	<u>Code</u>	<u>Begin</u>		<u>End</u>		<u>Cap</u>	<u>Red</u>	<u>Description</u>
			<u>Date</u>	<u>Time</u>	<u>Date</u>	<u>Time</u>			
H9	D2	1799	01/01/05	0000	01/31/05	2400	57	2	Being Investigated
K1	D2	0620	01/01/05	0000	01/04/05	1130	86	2	RH and SH Attempt
K2	D3	3501	01/01/05	0000	01/25/05	1230	86	1	HDP
K3	D2	1799	01/01/05	0000	01/05/05	1120	90	15	High Furnace Pressure
K5	D2	1799	01/01/05	0000	01/02/05	0010	142	22	High Furnace Pressure
W3	D2	4430	01/01/05	0000	01/31/05	2400	49	7	Turbine Vacuum Problem
W4	U1	4610	01/01/05	0000	01/05/05	1839	49	0	H2 Cooler - Water in Generator
W9	U1	5012	01/01/05	0000	01/31/05	2400	53	0	Damaged Turbine Compressor Blades
K5	PO	1800	01/02/05	0010	01/22/05	0104	142	0	Boiler Overhaul
K1	D2	0620	01/04/05	1130	01/05/05	0120	86	1	RH and SH Attempt
K1	D4	3411	01/05/05	0120	01/05/05	1223	86	36	12 BFP Motor Alignment
K3	D2	1799	01/05/05	1120	01/11/05	2024	90	22	High Furnace Pressure
K1	D2	0620	01/05/05	1223	01/09/05	0442	86	1	RH and SH Attempt
K1	D2	3110	01/09/05	0442	01/09/05	1028	86	36	Salt Leak
K1	D2	0620	01/09/05	1028	01/26/05	0613	86	1	RH and SH Attempt
K3	D2	1450	01/11/05	2024	01/18/05	0652	90	24	APH
W8	D4	3499	01/13/05	0300	01/13/05	0834	90	50	82 BFP
W5	MO	4430	01/13/05	0310	01/14/05	1530	57	0	Low Vacuum Troubleshooting
W8	U1	0440	01/14/05	1145	01/14/05	1909	90	0	Fuel Problem
K3	D2	1450	01/18/05	0652	01/20/05	1150	90	27	APH
K4	D3	3261	01/18/05	0848	01/18/05	0917	89	39	Washing Temp Traveling Screen
K3	D2	1450	01/20/05	1150	01/23/05	1419	90	30	APH
W6	D2	1799	01/20/05	1739	01/27/05	1300	55	5	Boiler Pressure Limit
K3	PO	1810	01/23/05	1419	01/31/05	2400	90	0	Boiler Inspection
K4	D4	3261	01/25/05	0515	01/25/05	1222	89	14	Traveling Screen
W0	MO	0480	01/25/05	1105	01/25/05	1457	50	0	Change Fuel Filers
K2	D4	3261	01/25/05	1230	01/25/05	1608	86	11	22 Traveling Screen
K2	D3	3501	01/25/05	1608	01/27/05	0640	86	1	HDP
K1	D4	3261	01/26/05	0613	01/26/05	1026	86	16	Traveling Screen
W5	D4	3415	01/26/05	0701	01/26/05	0943	57	22	51 BFP Aux Oil Pump
K1	D2	0620	01/26/05	1026	01/31/05	2400	86	1	RH and SH Attempt
K2	D4	3261	01/27/05	0640	01/27/05	0809	86	16	Traveling Screen
K2	D3	3501	01/27/05	0809	01/31/05	2400	86	1	HDP
K4	D4	3261	01/27/05	0812	01/27/05	0912	89	19	Traveling Screen
W6	PO	1800	01/27/05	1300	01/31/05	2400	55	0	Boiler Overhaul
W5	D2	3415	01/27/05	1317	01/27/05	1818	57	22	Water in 52 BFP Lube Oil Cooler
H9	D2	1799	02/01/05	0000	02/28/05	0000	57	2	Being Investigated
K1	D2	0620	02/01/05	0000	02/17/05	0432	86	1	RH and SH Attempt
K2	D3	3501	02/01/05	0000	02/01/05	0606	86	1	HDP
K3	PO	1810	02/01/05	0000	02/01/05	2209	90	0	Boiler Inspection

Unit	Type	Code	Begin		End		Cap	Red	Description
			Date	Time	Date	Time			
W3	D2	4430	02/01/05	0000	02/07/05	0700	49	7	Turbine Vacuum Problem
W6	PO	1800	02/01/05	0000	02/28/05	2400	55	0	Boiler Overhaul
W9	U1	5012	02/01/05	0000	02/28/05	0000	53	0	Damaged Turbine Compressor Blades
K2	D4	3410	02/01/05	0606	02/04/05	1457	86	41	22 BFP Volute
K3	D2	1799	02/01/05	2209	02/17/05	0108	90	6	High Furnace Pressure
W5	D4	3410	02/03/05	0700	02/03/05	1615	57	22	51 BFP
K2	D3	3501	02/04/05	1457	02/17/05	1227	86	1	HDP
W3	U2	1000	02/07/05	0700	02/28/05	2400	49	0	Tube Leak and Waterbox Leaks
K6	D1	1440	02/08/05	1035	02/08/05	1450	142	67	61 FD Fan Inlet Vanes
W7	D4	3410	02/10/05	0715	02/10/05	0820	87	37	72 BFP
W5	MO	3416	02/10/05	0745	02/10/05	1620	57	0	ACW Supply Piping
K6	D4	3260	02/14/05	0639	02/14/05	0857	142	52	61 Traveling Screen
W8	U1	3621	02/14/05	2209	02/16/05	1310	90	0	Check Aux Transformer
K3	D2	3410	02/17/05	0108	02/17/05	1623	90	45	32 BFP
K1	D4	3260	02/17/05	0432	02/17/05	1227	86	16	Inspect 11&12 Traveling Screens
K1	D2	0620	02/17/05	1227	02/28/05	0110	86	1	RH and SH Attempt
K2	D2	3210	02/17/05	1227	02/17/05	1530	86	16	CWP Repairs
K2	D3	3501	02/17/05	1530	02/18/05	0408	86	1	HDP
K3	D2	1799	02/17/05	1623	02/28/05	2400	90	6	High Furnace Pressure
K2	D4	3260	02/18/05	0408	02/18/05	1405	86	16	22 Traveling Screen
K2	D3	3501	02/18/05	1405	02/28/05	2400	86	1	HDP
H9	MO	0520	02/22/05	2154	02/24/05	1320	57	0	Main Steam By-Pass Valve
W0	MO	4840	02/23/05	0947	02/23/05	1551	50	0	Pre-Overhaul Tests
W7	D4	3415	02/24/05	0714	02/24/05	1014	87	32	72 BFP Aux Lube Oil Pump
H9	D2	1799	02/24/05	1320	02/28/05	2400	57	2	Being Investigated
K6	D2	1799	02/24/05	1515	02/26/05	0327	142	3	High Furnace Pressure
K6	D4	3210	02/26/05	0327	02/26/05	0404	142	62	61 CWP
K6	D2	1799	02/26/05	0404	02/28/05	2400	142	3	High Furnace Pressure
K1	MO	1810	02/28/05	0110	02/28/05	2400	86	0	Boiler Inspection
H9	D2	1799	03/01/05	0000	03/14/05	1920	57	2	Being Investigated
K1	MO	1810	03/01/05	0000	03/04/05	0220	86	0	Boiler Inspection
K2	D3	3501	03/01/05	0000	03/08/05	0314	86	1	HDP
K3	D2	1799	03/01/05	0000	03/31/05	2400	90	6	High Furnace Pressure
K6	D2	1799	03/01/05	0000	03/21/05	1900	142	3	High Furnace Pressure
W3	U2	1800	03/01/05	0000	03/31/05	2400	49	0	Boiler Overhaul
W6	PO	1800	03/01/05	0000	03/31/05	2400	55	0	Boiler Overhaul
W9	U1	5012	03/01/05	0000	03/31/05	2400	53	0	Turbine Compressor Blade Damage
W0	MO	4602	03/03/05	0830	03/03/05	0840	50	0	Exciter Maintenance
K1	D2	0620	03/04/05	0220	03/28/05	2351	86	1	RH and SH Attempter
W4	U1	1410	03/05/05	0627	03/05/05	1030	49	0	LS Fan Bearing cooling Water Piping Line
K2	D4	3410	03/08/05	0314	03/08/05	1620	86	39	22 BFP Mech Seal
K2	D3	3501	03/08/05	1620	03/12/05	1200	86	1	HDP
W0	U1	3869	03/09/05	1152	03/09/05	1242	50	0	Fire Suppression - False Trip
K2	D2	1410	03/12/05	1200	03/19/05	1142	86	16	FD Fan Linkage
W8	MO	3220	03/13/05	2216	03/24/05	1748	90	0	Tunnel Cleaning
H9	U1	0782	03/14/05	1920	03/16/05	1655	57	0	WW Header Leak

Unit	Type	Code	Begin		End		Cap	Red	Description
			Date	Time	Date	Time			
H9	D2	1799	03/16/05	1655	03/31/05	2400	57		2 Being Investigated
W7	U2	3110	03/17/05	0507	03/18/05	1620	87		0 Condenser Salt Leak
W0	U1	3869	03/17/05	0741	03/17/05	0852	50		0 Fire Suppression - False Trip
K2	U2	1480	03/19/05	1142	03/22/05	0129	86		0 APH Fan Bearing
W0	U1	4740	03/21/05	1229	03/21/05	1427	50		0 Generator Relay - False Trip
K6	D2	1799	03/21/05	1900	03/31/05	2400	142		13 High Furnace Pressure
W0	MO	3682	03/23/05	0730	03/23/05	1357	50		0 Reconnect W9 to the 138 kV Line
W0	MO	3682	03/28/05	0600	03/28/05	1530	50		0 Reconnect W9 to the 138 kV Line
W7	MO	3220	03/28/05	2130	03/31/05	2400	87		0 Tunnel Cleaning
K1	D2	3499	03/28/05	2351	03/31/05	2400	86	41	12 BFP Cover Plate
K4	D4	3260	03/30/05	0530	03/30/05	0646	89	14	42 CWP o/s Clean Drop Screen
W0	MO	4602	03/30/05	0530	03/30/05	0600	50		0 Exciter Maintenance
K1	D2	3499	04/01/05	0000	04/02/05	1411	86	41	Leaking Cover Plate on 12 BFP
H9	D2	1799	04/01/05	0000	04/09/05	0530	57		2 Being Investigated
W9	U1	5012	04/01/05	0000	04/11/05	1914	53		0 Damaged Compressor Blades
W7	MO	3220	04/01/05	0000	04/13/05	1800	87		0 Tunnel Cleaning
W6	PO	1800	04/01/05	0000	04/17/05	2038	55		0 Boiler Overhaul
W3	U2	1800	04/01/05	0000	04/19/05	1801	49		0 Tube Leak and Waterbox Leak
K6	D2	1799	04/01/05	0000	04/20/05	0946	142		13 High Furnace Pressure
K3	D2	1799	04/01/05	0000	04/30/05	1224	90		6 High Furnace Pressure
W0	U1	5041	04/01/05	1132	04/01/05	1152	50		0 Purging Diesel Oil Fuel Line on W9
W0	U1	5041	04/01/05	1332	04/01/05	1351	50		0 Purging Diesel Oil Fuel Line
K1	D2	0620	04/02/05	1411	04/07/05	0450	86		1 RH and SH Attempt
K1	D3	0590	04/07/05	0450	04/07/05	1447	86		6 Attenuator Control Valves
K1	D2	0620	04/07/05	1447	04/14/05	0635	86		1 RH and SH Attempt
W0	MO	5041	04/08/05	1035	04/08/05	1142	50		0 W9 Fuel Purging
K4	D4	0590	04/09/05	0500	04/09/05	1900	89	14	Replace SH Attempt Control Valves
H8	U3	0620	04/09/05	0530	04/10/05	1330	58		0 Cross Attenuation Repairs
H9	U3	0620	04/09/05	0530	04/10/05	1330	57		0 Cross Attenuation Repairs
H9	D2	1799	04/10/05	1330	04/11/05	0644	57		2 Being Investigated
H9	U2	4609	04/11/05	0644	04/11/05	1602	57		0 Remove Exciter
H9	D2	1799	04/11/05	1602	04/23/05	0650	57		2 Being Investigated
K5	D2	3410	04/12/05	0555	04/12/05	0855	142	72	51 BFP
K1	D2	0580	04/14/05	0635	04/14/05	1345	86		6 Replace Piping on South SH
K1	D4	3261	04/15/05	0645	04/15/05	1100	86	11	Inspect/Clear Traveling Screen
K1	D2	0620	04/15/05	1100	04/30/05	0355	86		1 RH and SH Attempt
K4	D4	3310	04/19/05	0625	04/19/05	0818	89	14	42 Condensate Pump Testing
K6	D2	1799	04/20/05	0946	04/30/05	2400	142	23	High Furnace Pressure
W3	U1	1000	04/20/05	1439	04/22/05	0833	49		0 Tube Leak
H9	MO	4609	04/23/05	0650	04/23/05	2051	57		0 Install Exciter
H9	D2	1799	04/23/05	2051	04/30/05	2400	57		2 Being Investigated
W5	D1	3415	04/27/05	0410	04/27/05	1424	57	29	BFP Aux Oil Pump
W4	D1	0480	04/29/05	0600	04/29/05	0802	49	19	Loose Plug on Igniter System
K1	D3	3410	04/30/05	0355	04/30/05	1330	86	38	12 BFP
K3	D2	1799	04/30/05	1224	04/30/05	2400	90	8	High Furnace Pressure
K4	D2	1799	04/30/05	1224	04/30/05	2400	89	1	Max Cap Test

Unit	Type	Code	Begin		End		Cap	Red	Description
			Date	Time	Date	Time			
K1	D2	0620	04/30/05	1330	04/30/05	2400	86	1	RH and SH Attempt
K6	D2	1799	05/01/05	0000	05/01/05	0517	142	23	High Furnace Pressure
K4	D2	1799	05/01/05	0000	05/10/05	2037	89	1	Max Cap Test
K1	D2	0620	05/01/05	0000	05/21/05	0525	86	1	RH and SH Attempt
H9	D2	1799	05/01/05	0000	05/31/05	2400	57	2	Being Investigated
K3	D2	1799	05/01/05	0000	05/31/05	2400	90	8	High Furnace Pressure
K6	MO	1800	05/01/05	0517	05/31/05	2400	142	0	Boiler Overhaul
W9	MO	5103	05/05/05	0449	05/13/05	0136	53	0	Exhaust Duct Work
W0	MO	5110	05/08/05	0959	05/09/05	0345	50	0	High Lube Oil Temp
W5	MO	3220	05/16/05	0730	05/25/05	1700	57	0	Tunnel Cleaning
K1	D4	3820	05/21/05	0525	05/21/05	2215	86	36	ACWP Repairs
K2	D4	3820	05/21/05	0525	05/21/05	2215	86	36	ACWP Repairs
W9	SF	5073	05/21/05	1344	05/21/05	1455	53	0	Flame Scanner
K1	D2	0620	05/21/05	2215	05/31/05	2400	86	1	RH and SH Attempt
W9	U1	4500	05/23/05	1427	05/23/05	2229	53	0	Generator Field Ground
K5	U1	4550	05/25/05	1211	05/25/05	1821	142	0	51 BFP Motor
K5	D1	4550	05/25/05	1821	05/27/05	1642	142	67	51 BFP Motor
K5	U1	4609	05/28/05	0729	05/28/05	2244	142	0	Loss of Exciter Power
K3	D2	1799	06/01/05	0000	06/03/05	0600	90	8	High Furnace Pressure
K1	D2	0620	06/01/05	0000	06/03/05	1223	86	1	RH and SH Attempt
H9	D2	1799	06/01/05	0000	06/30/05	2400	57	2	Being Investigated
K6	PO	1800	06/01/05	0000	06/30/05	2400	142	0	Boiler Overhaul
W6	MO	1487	06/01/05	0700	06/15/05	0741	55	0	APH Baskets
W5	D4	3299	06/01/05	1530	06/01/05	1630	57	27	51 CWP Testing
W4	D3	3299	06/01/05	1533	06/01/05	1727	49	15	41 CWP Lube Water Line
W8	U3	4430	06/01/05	2150	06/02/05	2340	90	0	Steam Seal Regulator Inlet Piping
K4	D4	3220	06/02/05	0651	06/02/05	1408	89	13	Remove Sand from Stilling Basin
W5	D4	3299	06/02/05	0730	06/02/05	0807	57	22	51 CWP Testing
K3	D4	3220	06/03/05	0600	06/03/05	1800	90	13	Remove Sand from Stilling Basin
K1	D4	3220	06/03/05	1223	06/03/05	1457	86	16	Pump Sand
K1	D2	0620	06/03/05	1457	06/06/05	0110	86	1	RH and SH Attempt
K3	D2	1799	06/03/05	1800	06/13/05	2200	90	8	High Furnace Pressure
H8	MO	4609	06/04/05	0730	06/05/05	0200	58	0	Exciter Lamination Repair
K2	D4	3220	06/04/05	1159	06/04/05	1442	86	16	Pump Sand
K1	D2	3410	06/06/05	0110	06/14/05	1514	86	41	12 BFP
W8	D2	3499	06/06/05	0925	06/06/05	1900	90	35	81 BFP Seal Failure
K4	D4	3310	06/07/05	0856	06/07/05	1732	89	10	42 Condensate Pump
W9	U1	3622	06/09/05	0937	06/09/05	1023	53	0	Loss of Potential from Startup Transformer
W0	U1	3869	06/10/05	1602	06/10/05	1657	50	0	Heat Sensor on Fire System
W0	U1	5048	06/10/05	1659	06/11/05	1829	50	0	Fuel Oil Leak
K4	D2	3839	06/12/05	1718	06/12/05	1806	89	7	Aux Steam Flow Problem
W3	U1	3211	06/13/05	1743	06/14/05	0834	49	0	CWP Lube Water - Lost Vacuum
K3	D2	1799	06/13/05	2200	06/30/05	2400	90	10	High Furnace Pressure
W3	D4	3211	06/14/05	0834	06/15/05	1030	49	24	32 CWP
K1	D2	0620	06/14/05	1514	06/30/05	2400	86	1	RH and SH Attempt
W4	U1	4609	06/14/05	1725	06/14/05	2038	49	0	Loss of Field-Pilot Exciter

Unit	Type	Code	Begin		End		Cap	Red	Description
			Date	Time	Date	Time			
W3	D4	3211	06/15/05	1208	06/23/05	0750	49	11	32 CWP
K4	D4	3310	06/21/05	0625	06/21/05	0924	89	7	Condensate Pump
W8	D2	3415	06/21/05	0640	06/21/05	1110	90	40	82 BFP Main Lube Oil Pump
K5	D4	3415	06/22/05	0440	06/22/05	0554	142	62	51 BFP Lube Oil Pump Coupling
K4	D2	3416	06/22/05	0713	06/22/05	1409	89	44	41 BFP Mech Seal
W3	D4	3211	06/23/05	0750	06/23/05	1105	49	23	32 CWP
W3	D4	3211	06/23/05	1105	06/23/05	1159	49	11	32 CWP
W3	D3	1799	06/23/05	1159	06/30/05	2400	49	2	Limited Air
W4	U3	4609	06/25/05	0643	06/25/05	1830	49	0	Main Exciter
W9	MO	3869	06/25/05	0945	06/25/05	1309	53	0	Ansul CO2 System Testing
W4	U1	3851	06/27/05	0600	06/27/05	0832	49	0	Instrument Air to FD Fan
W7	D2	3414	06/27/05	2044	06/28/05	0940	87	31	CWP-Discharge Pressure Switch
W7	D2	3414	06/28/05	0940	06/28/05	1017	87	27	CWP-Discharge Pressure Switch
W9	SF	5050	06/28/05	1010	06/28/05	1408	53	0	Stuck Ignitor
W7	D2	3431	06/28/05	1311	06/28/05	1610	87	32	71 BFP Recirc Isolation and Control Valves
W4	MO	4309	06/29/05	2145	06/30/05	0155	49	0	Tachometer and Eccentricity Monitor
W8	D2	3416	06/30/05	0230	06/30/05	2400	90	35	81 BFP Mech Seal
H9	D2	1799	07/01/05	0000	07/05/05	0734	57	2	Being Investigated
K1	D2	0620	07/01/05	0000	07/01/05	0033	86	1	RH and SH Attempt
K3	D2	1799	07/01/05	0000	07/31/05	2400	90	10	High Furnace Pressure
K6	MO	1800	07/01/05	0000	07/16/05	1733	142	0	Boiler Overhaul
W3	D3	1799	07/01/05	0000	07/11/05	1425	49	2	Limited Air
W8	D2	3416	07/01/05	0000	07/03/05	0510	90	35	81 BFP Mech Seal
K1	D3	3416	07/01/05	0033	07/01/05	1809	86	36	11 BFP Mech Seal Leaks
W9	SF	5250	07/01/05	1015	07/01/05	1029	53	0	Unknown Reason
K1	D2	1799	07/01/05	1809	07/02/05	1515	86	4	Max Capacity Text Results
W9	SF	5250	07/02/05	1020	07/02/05	1052	53	0	Unknown Reason
W8	D4	3415	07/03/05	0720	07/03/05	1047	90	35	81 BFP Main Lub Oil Pump
K4	D4	3431	07/04/05	2330	07/05/05	0515	89	49	42 BFP Dischg Vlv
H9	U1	1799	07/05/05	0734	07/05/05	0807	57	0	Being Investigated
H9	D2	1799	07/05/05	0807	07/31/05	2400	57	2	Being Investigated
W8	D2	3415	07/05/05	0932	07/05/05	1105	90	35	81 BFP Lub Oil Pump
W8	D2	3415	07/06/05	0932	07/06/05	1718	90	35	81 BFP Lub Oil Pump
W0	MO	3851	07/08/05	1609	07/08/05	1704	50	0	Install Temp Control Air Supply Line
W9	MO	3851	07/08/05	1609	07/08/05	1704	53	0	Install Temp Control Air Supply Line
W3	U2	3620	07/11/05	1425	07/11/05	2222	49	0	Electric Hot Spot in Phase Shift Trnfmtr swtchgr
K1	D2	4610	07/11/05	2212	07/12/05	0414	86	26	H2 Cooler Leak
W3	D3	1799	07/11/05	2222	07/19/05	0945	49	2	Limited Air
K1	D2	4610	07/12/05	0414	07/14/05	1848	86	18	H2 Cooler Leak
W9	U3	4510	07/13/05	1010	07/13/05	1655	53	0	Burnt Collector Rings
W0	U1	9910	07/14/05	1100	07/14/05	1347	50	0	Contractor Err-CT Ctlis-Thermocpl Ctl Crd
K1	D2	4610	07/14/05	1848	07/15/05	0911	86	36	H2 Cooler Leak
K1	MO	4610	07/15/05	0911	07/22/05	1815	86	0	H2 Cooler Leak
K6	MO	1800	07/17/05	1035	07/17/05	1413	142	0	Boiler Overhaul
W3	U1	4613	07/19/05	0945	07/31/05	2400	49	0	Generator H2 Seal Leak
W9	MO	5250	07/23/05	1015	07/23/05	1100	53	0	Modify a Wire

Unit	Type	Code	Begin		End		Cap	Red	Description
			Date	Time	Date	Time			
K2	MO	1470	07/23/05	2239	07/26/05	1813	86	0	APH Electric Drive Vibration
K4	D4	3260	07/25/05	1007	07/25/05	1238	89	24	Traveling Screen
K4	D4	3260	07/26/05	0548	07/26/05	1009	89	24	Traveling Screen
K6	MO	4262	07/26/05	2245	07/31/05	1410	142	0	Remove Strainers
W5	D3	3431	07/26/05	2330	07/27/05	1210	57	30	52 BFP Recirc Root Valve Pump Packing
H9	D2	1799	08/01/05	0000	08/03/05	1231	57	2	Being Investigated
K3	D2	1799	08/01/05	0000	08/06/05	0537	90	10	High Furnace Pressure
W3	U1	4613	08/01/05	0000	08/01/05	2048	49	0	Generator H2 Seal Leak
K6	U3	0870	08/01/05	0850	08/02/05	0744	142	0	APH Soot Blowing Valve
K2	D2	3410	08/01/05	2048	08/02/05	1032	86	44	22 BFP
W9	U1	5041	08/03/05	0835	08/04/05	1917	53	0	Fuel Oil Piping Replacement
K6	D2	3210	08/03/05	1003	08/08/05	0650	142	32	61 CWP
H9	U1	1000	08/03/05	1231	08/10/05	1129	57	0	Waterwall Tube Leak
W3	D2	4022	08/03/05	1830	08/19/05	0730	49	9	Water in LO at Higher Loads
H8	SF	4720	08/04/05	0611	08/04/05	0947	58	0	Unable to Synch to the Bus
K5	MO	4609	08/05/05	1305	08/15/05	0627	142	0	Exciter Bearing and AVR
K3	D4	3270	08/06/05	0537	08/06/05	1720	90	15	Inlet Cleaning
K4	D4	3270	08/06/05	0758	08/06/05	1732	89	14	Inlet Cleaning
K1	D4	3270	08/06/05	0811	08/06/05	0919	86	16	Inlet Cleaning
K2	D4	3270	08/06/05	0811	08/06/05	0919	86	16	Inlet Cleaning
K3	D2	1799	08/06/05	1720	08/18/05	0414	90	10	High Furnace Pressure
K6	D2	3410	08/08/05	0650	08/12/05	0850	142	62	62 BFP
H9	D2	1799	08/10/05	1129	08/31/05	2400	57	2	Being Investigated
K4	D2	3416	08/11/05	1159	08/11/05	1952	89	42	31 BFP Mech Seal
K6	D2	3410	08/12/05	1401	08/12/05	1631	142	70	62 BFP
K6	D2	3410	08/12/05	1631	08/13/05	1305	142	62	62 BFP
W0	MO	5299	08/13/05	0610	08/13/05	0804	50	0	Diaphragm on False Start Drain Vlv
K6	D2	3210	08/13/05	1305	08/27/05	1803	142	39	61 CWP
H8	D1	3230	08/14/05	1432	08/14/05	1935	58	23	81 CWP MOV control signal not receiving
W4	D2	3299	08/15/05	2016	08/17/05	1303	49	13	41 CWP Stuffing Box /Lube Water Piping
K2	D4	0510	08/16/05	0013	08/16/05	0525	86	26	Set Safety Valves
W8	MO	1493	08/16/05	2140	08/17/05	2306	90	0	Clean APH
W4	D2	3210	08/17/05	1303	08/24/05	0112	49	16	41 CWP
K3	MO	1487	08/18/05	0414	08/27/05	0547	90	0	Change APH Baskets
W9	MO	5250	08/18/05	0512	08/18/05	0948	53	0	Controls - 15 minute call back
W3	U1	4609	08/19/05	0730	08/19/05	1614	49	0	Exciter Bearing and AVR
H8	D2	3431	08/19/05	0830	08/19/05	1157	58	28	BFP Recirc Line isolation vlv body-patch weld
W3	D2	4022	08/19/05	1614	08/24/05	0112	49	9	Water in LO at Higher Loads
W3	U1	3819	08/24/05	0112	08/24/05	1815	49	0	Treated Water Pump
W4	U1	3819	08/24/05	0112	08/24/05	1815	49	0	Treated Water Pump
W3	D2	4022	08/24/05	1815	08/25/05	0247	49	9	Water in LO at Higher Loads
W4	D2	3299	08/24/05	1815	08/25/05	0834	49	16	41 CWP Stuffing Box /Lube Water Piping
W3	U1	1415	08/25/05	0247	08/25/05	0800	49	0	Unable to Start ID Fan
W3	D2	4022	08/25/05	0800	08/25/05	1015	49	9	Water in LO at Higher Loads
W3	U1	0480	08/25/05	1015	08/25/05	1231	49	0	Fuel Problem
W3	D2	4022	08/25/05	1231	08/31/05	1924	49	9	Water in LO at Higher Loads

Unit	Type	Code	Begin		End		Cap	Red	Description
			Date	Time	Date	Time			
W0	MO	3620	08/26/05	0730	08/26/05	1854	50	0	Main Transformer Oil Leak
K3	D2	1799	08/27/05	0547	08/27/05	1025	90	5	Max Capacity Text Results
W5	MO	3611	08/27/05	0738	08/27/05	1605	57	0	MOS#115 - 138 kV
K3	D3	3410	08/27/05	1025	08/30/05	0740	90	45	31 BFP
K5	D4	3310	08/29/05	0725	08/29/05	1700	142	9	52 Condensate Pump
K6	D2	3210	08/30/05	0725	08/30/05	1135	142	7	62 CWP
K3	D2	1799	08/30/05	0740	08/31/05	2400	90	5	Max Capacity Text Results
K4	U2	4610	08/30/05	1059	08/31/05	2400	89	0	H2 Leak
K6	D2	3210	08/31/05	1305	08/31/05	2400	142	32	62 CWP
W3	U2	1420	08/31/05	1924	08/31/05	2400	49	0	Loss of Cooling Water to FD LS Fan Bearing
H9	D2	1799	09/01/05	0000	09/30/05	2400	57	2	Being Investigated
K3	D2	1799	09/01/05	0000	09/01/05	1226	90	5	Max Capacity Test
K3	D2	1799	09/01/05	1226	09/30/05	2400	90	2	Max Capacity Test
K4	U2	4610	09/01/05	0000	09/17/05	0141	89	0	Hydrogen Leak
K6	D3	3210	09/01/05	0000	09/09/05	2247	142	32	62 CWP - Half Condenser Op
W3	U2	1420	09/01/05	0000	09/01/05	1100	49	0	Loss of Cooling Water to FD LS Fan Bearing
W3	D2	4022	09/01/05	1100	09/30/05	2400	49	9	Water in Lube Oil at Higher Loads
W5	U1	4260	09/01/05	2345	09/03/05	1652	57	0	Makai Throttle Valve Stuck in Closed Position
W6	D3	3410	09/02/05	1220	09/04/05	0700	55	29	61 BFP Internal Pump Problem
W9	U1	5250	09/02/05	2142	09/02/05	2400	53	0	Unknown
W6	MO	3431	09/04/05	0700	09/04/05	1610	55	0	61 BFP Isolation Valve
W6	D3	3410	09/04/05	1610	09/07/05	2000	55	29	61 BFP Internal Pump Problem
K5	D4	4293	09/06/05	0714	09/06/05	0745	142	42	Hydraulic Valve Replacement
W0	MO	3851	09/10/05	0730	09/10/05	1019	50	0	Tie in New Insurment Air Line
W4	MO	3110	09/10/05	0800	09/10/05	1145	49	0	Condenser Inspection in Prep of OH
W9	MO	3851	09/10/05	0730	09/10/05	0947	53	0	Tie in New Insurment Air Line
K4	U2	4260	09/17/05	0942	09/17/05	2339	89	0	Blown Steam Supply Valve
K5	MO	4269	09/19/05	0347	09/19/05	1355	142	0	Auto-Stop Pressure Regulating Relief Valve
K2	MO	3999	09/20/05	0126	09/30/05	2400	86	0	Annunciator Upgrade
W0	U1	3869	09/25/05	1842	09/26/05	1830	50	0	Faulty CO2 System
W4	U2	3611	09/26/05	2100	09/26/05	2350	49	0	Hot Spot on SW4459A
W6	D4	3413	09/28/05	0857	09/28/05	1300	55	29	Replace Coupling on 61 BFP
H9	D2	1799	10/01/05	0000	10/31/05	2400	57	2	Being Investigated
K2	MO	3999	10/01/05	0000	10/31/05	2400	86	0	Annunciator Upgrade
K3	D2	1799	10/01/05	0000	10/31/05	2400	90	2	Results of Max Cap Test
W3	D2	4022	10/01/05	0000	10/31/05	2400	49	9	Water in Lube Oil at Higher Loads
H8	U3	0775	10/01/05	0645	10/02/05	0100	58	0	Economizer Recirc Line Leak
W9	MO	4609	10/03/05	1315	10/03/05	1711	53	0	Exciter Maintenance
W9	MO	5070	10/04/05	0730	10/05/05	2100	53	0	Combuster Temp Difference
W0	MO	5041	10/05/05	1545	10/05/05	1637	50	0	Venting Fuel Line
W9	MO	5042	10/06/05	0710	10/06/05	2134	53	0	Fuel Nozzle Maint
W0	MO	5041	10/06/05	2054	10/06/05	2134	50	0	Purging Fuel Line
W9	MO	5070	10/07/05	0730	10/07/05	2256	53	0	Inspect Cross Over Pipe
W8	D1	3410	10/12/05	1420	10/12/05	1610	90	45	81 BFP Temp Repairs
W8	D4	3410	10/13/05	0435	10/14/05	0642	90	35	81 BFP Mechanical Seal
K5	D4	4301	10/13/05	0500	10/13/05	0530	142	32	Change Servo on Governor Valve

Unit	Type	Code	Begin		End		Cap	Red	Description
			Date	Time	Date	Time			
W8	U1	3340	10/14/05	0642	10/31/05	2400	90	0	LP Blade Damage/H2O Induct/FWH Tube Leak
W9	U1	5250	10/16/05	1701	10/16/05	1740	53	0	Vibration Problem
W0	U1	3829	10/17/05	0902	10/17/05	1823	50	0	Repair Cooling Water
W9	U1	5250	10/17/05	1036	10/17/05	1112	53	0	False Vibration Reading
W9	MO	4609	10/19/05	0743	10/19/05	0802	53	0	Exciter Maintenance
W0	MO	4609	10/19/05	0802	10/19/05	0813	50	0	Exciter Maintenance
K6	D2	0410	10/20/05	2340	10/21/05	0450	142	52	Atomizing Steam Leaks on Burner Front
K5	U1	3341	10/21/05	0655	10/21/05	1755	142	0	Packing on FWH downstm isolation vlv
W4	MO	3619	10/22/05	0949	10/22/05	2021	49	0	Substation Work on 46kV Bus
K5	D1	3310	10/23/05	0921	10/23/05	1325	142	22	51 Condensate Pump Failed to Start
W7	D2	3110	10/23/05	2007	10/24/05	0559	87	47	Condenser Salt Leak
W5	D4	3410	10/24/05	0805	10/24/05	0855	57	32	51 BFP Testing
W5	D4	3410	10/24/05	0858	10/24/05	1135	57	37	51 BFP Testing
K6	D4	0360	10/26/05	0353	10/26/05	1105	142	32	Burner Maintenance
H8	MO	3619	10/29/05	1035	10/29/05	2255	58	0	Substation Work on 46kV "A" Bus
H9	D2	1799	11/01/05	0000	11/30/05	2400	57	2	Being Investigated
K2	MO	3999	11/01/05	0000	11/30/05	2400	86	0	Annunciator Upgrade
K3	D2	1799	11/01/05	0000	11/18/05	0640	90	2	Max Cap Test
W3	D2	4022	11/01/05	0000	11/12/05	0841	49	9	Water in Lube Oil at Higher Loads
W8	U1	3340	11/01/05	0000	11/30/05	2400	90	0	LP Blade Damage/H2O Induct/FWH Tube Leak
W9	MO	4609	11/02/05	0822	11/02/05	0834	53	0	Exciter Maintenance
W0	MO	4609	11/02/05	0834	11/02/05	0845	50	0	Exciter Maintenance
K1	D4	3410	11/04/05	0448	11/04/05	0620	86	41	11 BFP Repairs
K6	D2	9910	11/04/05	1355	11/04/05	1550	142	42	Hot Spot on Grounding Bolt
K6	D2	9910	11/04/05	1550	11/04/05	1915	142	62	Hot Spot on Grounding Bolt
K5	U2	0810	11/04/05	2234	11/12/05	1752	142	0	Hot Spot on Boiler Wall
K1	D2	1060	11/06/05	1354	11/13/05	1048	86	36	Reheater Tube Leak
K6	D2	9910	11/06/05	2030	11/07/05	1710	142	37	Hot Spot on Grounding Bolt
K6	D2	9910	11/07/05	1710	11/08/05	1400	142	42	Hot Spot on Grounding Bolt
K6	D2	9910	11/08/05	1400	11/09/05	1415	142	62	Hot Spot on Grounding Bolt
W0	U1	3869	11/08/05	1657	11/08/05	1827	50	0	Ctl Prob-False Alarm on Fire Suppression
W0	U3	3869	11/09/05	2052	11/09/05	2330	50	0	Inspect Fire Suppression System
W4	U1	3619	11/12/05	0645	11/12/05	2030	49	0	Substation PT Explosion
W3	U1	3619	11/12/05	0841	11/12/05	1741	49	0	Substation PT Explosion
W3	D2	4022	11/12/05	1741	11/14/05	0920	49	9	Water in Lube Oil at Higher Loads
K1	U2	1000	11/13/05	1048	11/19/05	2359	86	0	Tube Leak
W3	D2	4022	11/14/05	0920	11/30/05	2400	49	14	Water in Lube Oil at Higher Loads
K6	D2	3411	11/17/05	0614	11/17/05	1255	142	72	61 BFP Motor Collar
W6	D4	3416	11/17/05	0627	11/18/05	0601	55	29	61 BFP Vibration
W6	D4	3416	11/18/05	0601	11/24/05	0900	55	26	61 BFP Vibration
K3	D3	0590	11/18/05	0640	11/18/05	1721	90	20	SH Block Valve
K3	D2	1799	11/18/05	1721	11/30/05	2400	90	2	Max Cap Test
W9	MO	4609	11/23/05	0827	11/23/05	0840	53	0	Exciter Maintenance
W0	MO	4609	11/23/05	0843	11/23/05	0856	50	0	Exciter Maintenance
W6	U2	1080	11/24/05	0900	11/26/05	1044	55	0	Economizer Tube Leak
W9	U1	4740	11/27/05	1743	11/27/05	1958	53	0	Overspeed Trip

<u>Unit</u>	<u>Type</u>	<u>Code</u>	<u>Begin</u>		<u>End</u>		<u>Cap</u>	<u>Red</u>	<u>Description</u>
			<u>Date</u>	<u>Time</u>	<u>Date</u>	<u>Time</u>			
W0	U1	5049	11/28/05	0958	11/28/05	1744	50	0	Oil Cleanup
H9	D2	1799	12/01/05	0000	12/06/05	0853	57	2	Being Investigated
K2	MO	3999	12/01/05	0000	12/17/05	2100	86	0	Annunciator Upgrade
K3	D2	1799	12/01/05	0000	12/08/05	0500	90	2	Results of Cap Test
W3	D2	4022	12/01/05	0000	12/13/05	0056	49	14	Water in Lube Oil 31 CWP
W8	U1	3340	12/01/05	0000	12/31/05	2400	90	0	LP Blade Damage/H2O Induct/FWH Tube Leak
K6	D3	3410	12/01/05	0135	12/01/05	1027	142	67	62 BFP
K6	MO	9910	12/03/05	0920	12/04/05	1608	142	0	Isophase Bus Duct Shorting Plate
H9	U1	4301	12/06/05	0853	12/06/05	1644	57	0	Turbine Governor Control Oil Line
H9	D2	1799	12/06/05	1644	12/17/05	0000	57	2	Being Investigated
K3	D2	0590	12/08/05	0500	12/08/05	0929	90	52	SH Block Valve Pin
K3	D2	1799	12/08/05	0929	12/31/05	2400	90	2	Results of Cap Test
W5	D2	3110	12/11/05	0544	12/11/05	2211	57	22	Condenser Salt Leak
W3	U1	4022	12/13/05	0056	12/13/05	0805	49	0	Water in Lube Oil 31 CWP
W3	D2	4022	12/13/05	0805	12/31/05	2400	49	14	Water in Lube Oil 31 CWP
H9	MO	3619	12/17/05	0000	12/31/05	2400	57	0	Substation Work on 46 kV Line
K2	U1	4470	12/19/05	1151	12/19/05	2034	86	0	Turbine Differential
K2	U1	4470	12/20/05	0935	12/20/05	1400	86	0	Turbine Differential
W7	MO	3220	12/25/05	2022	12/31/05	2400	87	0	Tunnel Cleaning

Hawaiian Electric Company, Inc.

2005 GENERATING UNIT LOAD CARRYING CAPABILITIES

Unit	(A) Operating Minimum (Net MW)	(B) Normal Top Load (Net MW)
Honolulu 8	22.3	52.9
Honolulu 9	22.5	54.4
Waiau 3	22.1	46.2
Waiau 4	22.3	46.4
Waiau 5	22.6	54.6
Waiau 6	22.5	55.6
Waiau 7	32.7	88.1
Waiau 8	32.7	88.1
Waiau 9	13.9	51.9
Waiau 10	13.9	49.9
Kahe 1	27.7	88.2
Kahe 2	27.9	86.3
Kahe 3	27.8	88.2
Kahe 4	27.8	89.2
Kahe 5	50.4	134.7
Kahe 6	40.1	133.9
Kalaeloa CT1	32.5	90.0
Kalaeloa CT2	32.5	90.0
Kalaeloa Additional Capacity	0.0	28.0
AES-Hawaii	63.0	180.0
H-POWER	25.0	46.0

Hawaiian Electric Company, Inc.

2005 EFOR

Unit	EFOR
Honolulu 8	1.7%
Honolulu 9	12.0%
Waiau 3	42.2%
Waiau 4	5.0%
Waiau 5	1.0%
Waiau 6	2.6%
Waiau 7	0.6%
Waiau 8	23.5%
Waiau 9	69.2%
Waiau 10	7.4%
Kahe 1	5.4%
Kahe 2	2.0%
Kahe 3	8.3%
Kahe 4	4.9%
Kahe 5	3.1%
Kahe 6	5.9%
HECO	9.3%
Kalaeloa CT1	0.5%
AES-Hawaii	0.7%
H-POWER	
Availability Factor	87.0%

Hawaiian Electric Company, Inc.

TEST YEAR 2007 GENERATING UNIT LOAD CARRYING CAPABILITIES

Unit	(A) Operating Minimum (Net MW)	(B) Normal Top Load (Net MW)
Honolulu 8	22.3	52.9
Honolulu 9	22.5	54.4
Waiau 3	22.1	46.2
Waiau 4	22.3	46.4
Waiau 5	22.6	54.6
Waiau 6	22.5	53.7
Waiau 7	32.7	83.2
Waiau 8	32.7	86.2
Waiau 9	6.0	52.9
Waiau 10	6.0	49.9
Kahe 1	32.6	82.3
Kahe 2	32.8	82.4
Kahe 3	32.7	86.3
Kahe 4	32.7	85.3
Kahe 5	49.8	134.7
Kahe 6	40.1	133.9
Kalaeloa CT1	32.5	90.0
Kalaeloa CT2	32.5	90.0
Kalaeloa Additional Capacity	0.0	28.0
AES-Hawaii	63.0	180.0
H-POWER	25.0	46.0

Hawaiian Electric Company, Inc.

TEST YEAR 2007 HEAT RATE CONSTANTS

Unit	A Coefficient	B Coefficient	C Coefficient
Honolulu 8	36.4132	10.3115	0.00568
Honolulu 9	69.8920	8.9484	0.02204
Waiau 3	146.5394	4.8113	0.08544
Waiau 4	49.4604	9.3112	0.03203
Waiau 5	61.0595	8.8137	0.02981
Waiau 6	64.1104	8.7407	0.03199
Waiau 7	88.2107	7.9405	0.01961
Waiau 8	86.8712	8.0919	0.01315
Waiau 9	198.6939	7.8497	0.02922
Waiau 10	191.3958	7.2757	0.02851
Kahe 1	73.4991	8.1733	0.01292
Kahe 2	46.0037	9.0952	0.00350
Kahe 3	57.4864	8.5169	0.00634
Kahe 4	75.5539	8.4394	0.00739
Kahe 5	89.3444	8.6434	0.00305
Kahe 6	117.0609	8.1819	0.00769
Kalaeloa CT1	299.0260	4.4288	0.00931
Kalaeloa CT2	299.0260	4.4288	0.00931
Kalaeloa Additional Capacity	0.0100	8.6408	0.00000
AES-Hawaii	258.7479	14.9713	0.00510
H-POWER	10.0000	8.2000	0.00010

Hawaiian Electric Company, Inc.

TEST YEAR 2007 EQUIVALENT FORCED OUTAGE RATE

Unit	2000	2001	2002	2003	2004	2005	Forward- Looking
Honolulu 8	7.2%	10.4%	3.6%	13.0%	23.7%	1.7%	12.8%
Honolulu 9	1.4%	3.0%	3.1%	20.0%	1.0%	12.0%	12.8%
Waiau 3	2.0%	1.9%	6.5%	10.9%	24.7%	42.2%	33.5%
Waiau 4	3.0%	14.8%	5.1%	3.4%	13.4%	5.0%	12.8%
Waiau 5	3.6%	0.8%	2.2%	4.1%	1.0%	1.0%	2.9%
Waiau 6	3.8%	3.9%	0.6%	2.8%	0.3%	2.6%	2.9%
Waiau 7	0.7%	1.6%	1.8%	0.7%	1.2%	0.6%	7.7%
Waiau 8	5.3%	1.5%	0.1%	0.0%	7.7%	23.5%	7.7%
Waiau 9	65.7%	4.1%	49.9%	6.9%	63.2%	69.2%	10.0%
Waiau 10	13.4%	5.0%	13.6%	36.0%	4.4%	7.4%	10.0%
Kahe 1	1.2%	0.7%	2.3%	1.2%	2.6%	5.4%	4.3%
Kahe 2	1.7%	3.1%	1.0%	2.2%	2.9%	2.0%	4.3%
Kahe 3	0.3%	3.9%	0.1%	3.5%	8.8%	8.3%	7.7%
Kahe 4	5.7%	0.9%	3.6%	1.3%	1.4%	4.9%	7.7%
Kahe 5	1.7%	0.4%	1.0%	1.1%	7.6%	3.1%	5.5%
Kahe 6	0.9%	0.4%	0.5%	1.9%	3.3%	5.9%	4.9%
HECO	2.4%	1.6%	1.8%	2.4%	6.2%	9.3%	6.8%
Kalaeloa							1.5%
AES-Hawaii	(See Mr. Ching's Testimony HECO T-5)						1.0%
H-POWER				Availability Factor			87.0%

Hawaiian Electric Company, Inc.
TEST YEAR 2007 SALES FUEL EFFICIENCY

Line	Description	(A) Net Generation (MWh)	(B) ¹ Fuel (Barrels)	(C) Fuel (MBtu)	(D) = (C) ÷ (A) * 1000
					(D) Net Heat Rate (Btu/kWh)
1.	Steam	4,693,150	8,030,246	49,787,524	10,609
2.	Diesel - Waiau	19,120	101,195	593,004	31,015
3.	Diesel - DG	(Treated Separately In the ECAF)			
4.	Total	4,712,270	8,131,441	50,380,528	10,691

SALES PROVIDED BY COMPANY GENERATION

5.	Test Year Sales	7,720,800
6.	Company Generated	58.12%
7.	Sales Provided by Company	4,487,694

SALES FUEL EFFICIENCY

	Company Sales	Company MBtu Consumed
8.	Company Sales and Fuel	4,487,694
9.	Sales Heat Rate	0.011226

¹ Steam's LSFO heat content is 6.2 MBtu/barrel
Diesel's heat content is 5.86 MBtu/barrel

Hawaiian Electric Company, Inc.

HISTORICAL NET HEAT RATE (CENTRAL STATION GENERATION)

Line	Description	(A) 2001	(B) 2002	(C) 2003	(D) 2004	(E) 2005
1.	Total Fuel Consumed (MBtu)					
2.	Steam	46,577,520	48,195,589	48,441,659	51,453,940	49,790,662
3.	Diesel	128,605	205,872	359,213	785,235	678,309
4.	Total	46,706,125	48,401,461	48,800,872	52,239,176	50,468,971
5.	Net Energy Generated (MWh)					
6.	Steam	4,484,084	4,628,152	4,651,903	4,881,864	4,688,606
7.	Diesel	4,427	9,754	17,040	36,819	32,324
8.	Total	4,488,510	4,637,906	4,668,942	4,918,684	4,720,930
9.	Heat Rate (Btu/kWh)					
10.	Steam	10,387	10,414	10,413	10,540	10,620
11.	Diesel	29,053	21,106	21,081	21,327	20,985
12.	Total	10,406	10,436	10,452	10,621	10,690

Hawaiian Electric Company, Inc.

TEST YEAR FUEL RELATED EXPENSES
(\$000)

		(E) = (A)+(B)+(C)+(D)				
Line	Description	(A) Kahe	(B) Waiau	(C) Honolulu	(D) Other	(E) Total
1.	Facilities Base Fee	613	1,527	-	-	2,140
2.	Pipeline Maintenance	302	133	-	-	435
3.	Tankfarm Management Fee	-	-	-	1,133	1,133
4.	In-House Fuel Handling	279	506		346	1,131
5.	Production	-	-	-	-	-
6.	Environmental	-	-	-	-	-
7.	Total	1,195	2,165	-	1,479	4,839

Hawaiian Electric Company, Inc.

**Estimated Annual Usage and Cost
for Calcium Nitrate Fuel Additive at Kahe Unit 6**

Based on Kahe 6 estimated annual generation of 715,694 GWH,
and the estimated annual fuel usage at Kahe 6 of 7,475,899 MBTU.

The annual fuel usage in gallons is calculated to be:
 $7,475,899 \text{ MBTU} \div 6.2 \text{ MBTU per bbl} \times 42 \text{ gallons per bbl}$
 $= 50,643,187 \text{ gallons of Fuel Oil}$

Fuel additive usage is 1 gallon of additive per 4000 gallons of Fuel Oil

Estimated annual fuel additive usage:
 $50,643,187 \div 4000 = \underline{\underline{12,661 \text{ gallons fuel additive per year}}}$

Estimated annual cost of the fuel additive.

The calculation of the estimated annual fuel additive cost is shown below:

- a) cost of the additive is \$6.10 per gallon
 $\$6.10 \times 12,661 = \$77,232$
- b) tax = $\$77,232 \times 4.5\% = \$3,475$
- c) materials on-cost is 11.05%
 $(\$77,232 + \$3,475) \times 11.05\% = \$8,918$
- d) shipping costs approximately \$6,500 per container load (3,575 gallons),
or \$1.818 per gallon
 $12,661 \text{ gallons} \times \$1.818 = \$23,020$

The total estimated annual cost of the fuel additive is:
 $\$77,232 + \$3,475 + \$8,918 + \$23,020 = \underline{\underline{\$112,645}}$

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PPC Proprietary Program Licensed to HECO Till 12/2099 HECO PMONTH V.022504
HECO Rate Case 2007 Test Year - Direct Testimony Page: 1
10/27/06 14:55:48

Case Name: h07tyd1
Simulation Period: 2007/ 1 - 2007/12

File	Name
Study Data:	h07tyd1.stu
Report Control:	h07tyd1.rfc
Area Data:	h07tyd1.ara
Plant Data:	h07tyd1.plt
Fuel Class Data:	h07tyd1.fcl
Spot Fuel Data:	h07tyd1.sfu
Contract Fuel Data:	
Thermal Basic Data:	h07tyd1.lba
Thermal Cost Data:	h07tyd1.lcs
Thermal Performance Data:	h07tyd1.upf
Thermal NOx Data:	
Hourly Pattern # 1:	ptn1.hcp
Hourly Pattern # 2:	ptn2.hcp
Hourly Pattern # 3:	ptn3.hcp
Hourly Pattern # 4:	ptn4.hcp
Hourly Pattern # 5:	ptn5.hcp
Hourly Pattern # 6:	ptn6.hcp
Hydro Data:	
Pumped Storage Data:	
Fixed Energy Transaction Data:	h07tyd1.trf
Economy Transaction Data:	
DSM Data:	
Monte Carlo Scenario Data:	h07tyd1.mcs
Thermal Maintenance Data:	h07tyd1.umd
Hydro Maintenance Data:	
P-S Maintenance Data:	
Load Data:	h07tyd1.leei
CC Data #1:	
CC Data #2:	
CC Data #3:	
CC Data #4:	
CC Maintenance Data:	
Quick Load Pick Up Curve Data:	h07tyd1.qlp
Spinning Reserve Data:	h07tyd1.spn

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Calendar Year: 2007

Monthly system Load and Capacity Summary

Mnth	Peak Load MW	Mnthly Energy GWh	Load Factor %	Installed Capacity MW	Maint outage MW	Adjusted Capacity MW	Capacity Reserve MW	Capacity Reserve %
Jan	1192	655.7	73.9	1483.3	82.3	1401	209	17.53
Feb	1185	589	74	1500.3	0	1500.3	315.3	26.61
Mar	1168	663.8	76.4	1618.3	165.6	1452.7	284.7	24.38
Apr	1194	645.3	75.1	1647.8	136.1	1511.7	317.7	26.61
May	1212	679.7	75.4	1647.8	187.6	1460.2	248.2	20.48
Jun	1206	679.8	78.3	1618.3	132.7	1485.6	279.6	23.19
Jul	1250	705	75.8	1601.3	86.3	1515	265	21.2
Aug	1281	725.8	76.2	1618.3	140	1478.3	197.3	15.4
Sep	1272	707.2	77.2	1618.3	54.6	1563.7	291.7	22.93
Oct	1287	719.9	75.2	1528.3	54.6	1473.7	186.7	14.51
Nov	1266	671.4	73.7	1618.3	86.2	1532.1	266.1	21.02
Dec	1230	666.7	72.9	1618.3	139.1	1479.2	249.2	20.26

Summary for Period:

Peak Load	(MW):	1287
Total Energy	(GWh):	8109.27
Load Factor	(%):	71.93

Month	AM Peak (MW)	PM Peak (MW)	Capacity (MW)	Maint. (MW)	Reserve (MW)	Largest (MW)	LSC (MW)	Diff. (MW)
Jan	1113	1192	1483.3	82.3	209	180	1221	29
Feb	1119	1185	1500.3	0	315.3	180	1320.3	135.3
Mar	1131	1168	1618.3	165.6	284.7	180	1272.7	104.7
Apr	1184	1194	1647.8	136.1	317.7	180	1331.7	137.7
May	1186	1212	1647.8	187.6	248.2	180	1280.2	68.2
Jun	1195	1206	1618.3	132.7	279.6	180	1305.6	99.6
Jul	1241	1250	1601.3	86.3	265	180	1335	85
Aug	1262	1281	1618.3	140	197.3	180	1298.3	17.3
Sep	1256	1272	1618.3	54.6	291.7	180	1383.7	111.7
Oct	1237	1287	1528.3	54.6	186.7	180	1293.7	6.7
Nov	1212	1266	1618.3	86.2	266.1	180	1352.1	86.1
Dec	1143	1230	1618.3	139.1	249.2	180	1299.2	69.2

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Station Summary

Station	Capacity MW	Unit	Hours	CF %	Energy GWh	MBtu k	Cold Start	Warm Start	Stup Cst M\$	Fuel Cst M\$	VO&M Cst M\$	FO&M Cst M\$	Oper Cst \$/MWh	Tot Cst \$/MWh	Ave Hrt Btu/kWh
1 Honolu 8	52.9	1	3379.4	17.74	82.236	1035.7	276	0	0	11.3933	0	0	131.54	138.54	12595
2 Honolu 9	54.4	1	2448.6	13.74	65.492	847	248	0	0	9.3173	0	0	134.35	142.27	12933
3 Waiau 3	46.2	1	1367.7	10.95	44.351	593.3	161	0	0	6.2302	0	0	127.61	140.47	13378
4 Waiau 4	46.4	1	3003.3	17.64	71.754	971.7	290	0	0	10.2028	0	0	127.89	142.19	13542
5 Waiau 5	54.6	1	4717.3	24.42	116.864	1488.1	282	0	0	15.6249	0	0	126.68	133.7	12733
6 Waiau 6	53.7	1	4835.2	25.03	117.83	1531.5	341	0	0	16.0815	0	0	128.08	136.48	12998
7 Waiau 7	83.2	1	6093.8	39.2	285.876	3120.8	6	0	0	32.7691	0	0	113.6	114.63	10917
8 Waiau 8	86.2	1	7506.5	60.75	458.989	4796.4	6	0	0	50.3632	0	0	109	109.73	10450
9 Waiau 9	52.9	1	688.7	1.58	7.318	201.6	133	0	0	3.4225	0	0	464.29	467.7	27556
10 Waiau 10	49.9	1	1300.1	2.7	11.802	344.5	219	0	0	5.8474	0	0	491.99	495.46	29192
11 Kahe 1	82.3	1	7466.9	53.54	386.235	3999.4	3	0	0	41.9944	0	0	108.32	108.73	10355
12 Kahe 2	82.4	1	7916.9	64.2	463.648	4708.4	4	0	0	49.4387	0	0	106.17	106.63	10155
13 Kahe 3	86.3	1	6071.5	57.09	431.808	4258.3	5	0	0	44.7134	0	0	102.98	103.55	9862
14 Kahe 4	85.3	1	7780.6	71.48	534.435	5416	5	0	0	56.8691	0	0	105.87	106.41	10134
15 Kahe 5	134.7	1	7824.2	77.75	917.935	8999.2	4	0	0	94.4935	0	0	102.71	102.94	9804
16 Kahe 6	133.9	1	8059.2	60.98	715.694	7369.9	4	0	0	77.3851	0	0	107.54	108.13	10298
17 Kala CC	90	1	6694.8	75.96	599.205	5155.5	92	0	0	58.0826	0	0	96.93	96.93	8604
18 Kala CC	90	1	8398.7	94.96	749.055	6452.1	5	0	0	72.6912	0	0	97.04	97.04	8614
19 AES	180	1	8673.8	97.61	1539.908	26703.1	2	0	0	42.7959	0	0	27.79	27.79	17341
20 HPOWER	46	1	8758.3	83.69	337.437	2855.3	1	0	0	0	0	0	0	0	8462
21 Kala CC	28	1	6696	57.51	141.147	1219.7	92	0	0	13.7413	0	0	97.35	97.35	8641
23 DG Sub	31.2	1	782.8	8.93	23.011	23.7	261	0	0	0.4169	0	0	18.12	18.12	1031
43 RIDERI	5	1	525.6	1.2	0.524	110.2	108	0	0	0	0	0	0	0.02	210170
System					8102.554	92201	2549	0	0	713.8743	0	0	87.27	88.1	11379

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Transaction Summary

ID	Transaction	Type	Energy GWh	Engy Cost M\$	CAP Cost M\$	Total Cost M\$	Ave. Cost \$/MWh
2	Non-Firm	CONSTANT PI	5.881	0.3814	0	0.3814	64.86

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Fuel Type Summary

Type	Energy GWh	Fuel 000	Fuel Unit	MBtu 000	Fuel Cost M\$	Fuel Cost \$/MWh	Heat Rate Btu/kWh	Fuel Cost C/MBtu
pot:								
1 WLSFO	1095.663	2016.422 Bbl		12501.8	131.2716	119.81	11410	1050.02
2 KLSFO	3449.795	5605.027 Bbl		34751.2	364.8942	105.77	10074	1050.02
3 HLSFO	147.729	303.667 Bbl		1882.7	20.7106	140.19	12745	1100.03
4 DG SUB	23.011	4.047 Bbl		23.7	0.4169	18.12	1031	1757.77
5 DIESEL	19.12	93.202 Bbl		546.2	9.27	484.84	28565	1697.28
7 AES	1539.908	26703.08 Bbl		26703.1	42.7959	27.79	17341	160.27
8 KALAELOA	1489.407	2137.886 Bbl		12827.3	144.5151	97.03	8612	1126.62
10 REFUSE	337.437	460.528 Bbl		2855.3	0	0	8462	0
11 LDMGMT	0.524	110.202 Bbl		110.2	0	0.02	210170	0.01

Fuel Class Summary

Class	Energy GWh	Fuel 000	Fuel Unit	MBtu 000	Fuel Cost M\$	Fuel Cost \$/MWh	Heat Rate Btu/kWh	Fuel Cost C/MBtu
1 LSFO	4693.147	7925.117 Bbl		49135.7	516.8764	110.13	10470	1051.9
2 DIESEL	19.12	93.202 Bbl		546.2	9.27	484.84	28565	1697.3
4 AES	1539.908	26703.08 Bbl		26703.1	42.7959	27.79	17341	160.3
5 KALAELOA	1489.407	2137.886 Bbl		12827.3	144.5151	97.03	8612	1126.6
7 REFUSE	337.437	460.528 Bbl		2855.3	0	0	8462	0
8 LdMgmt	0.524	110.202 Bbl		110.2	0	0.02	210170	0
9 DG SUB	23.011	4.047 Bbl		23.7	0.4169	18.12	1031	1757.8

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Fiscal Year: 2007

System Energy and Cost Summary

	Demand				Supply			
	GWh	Cost M\$	Cost \$/MWh		GWh	Cost M\$	Cost \$/MWh	
Load:	8109.29				Thermal Gen	8102.55	713.8743	88.1
P-S Pumping:	0				Hydro Gen:	0	0	0
P-S Payback:	0				P-S Gen:	0	0	0
F. E. Sale:	0	0	0		F. E. Purc:	5.88	0.3814	64.86
Econ. Sale:	0	0	0		Econ. Purc:	0	0	0
Unit Sale:	0	0	0					
Transm Loss:	0				Rej. Fuel:		0	
Dsm Load:	0				Dsm Reduct	0		
Dumped Engy:	0	0	0		Emerg Purc	0	0	0
					E.U. Energy	0.83	0.0832	100
					Lvl Cost:		0	
Total:	8109.29	0	0		Total:	8109.27	714.3389	88.09
					System Net:		714.3389	88.09
					LOLH(hr):	21.28		

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Fiscal Year: 2007

Plant Summary

Plant	CF %	Energy GWh	MBtu 1000 Ups	Start	Stup Cst M\$	Fuel Cst M\$	O&M Cst M\$	Tot Cst \$/MWh
1 Kahe	65.1	3449.755	34751.2	26	0	364.8942	0	105.77
2 Waiou	26.9	1114.783	13048	1438	0	140.5415	0	126.07
3 Kalaeloa	81.7	1489.408	12827.3	189	0	144.5151	0	97.03
4 AES	97.7	1539.908	26703.1	2	0	42.7959	0	27.79
5 HPOWER	83.7	337.4367	2855.3	1	0	0	0	0
6 Honolulu	15.7	147.7285	1882.7	524	0	20.7107	0	140.19
7	1.2	0.5243	110.2	108	0	0	0	0.02
9 DG Sub	8.9	23.0113	23.7	261	0	0.4169	0	18.12

Fiscal Year: 2007

Yearly Fuel & Var O&M Cost by Subperiod (M\$)

Off Peak	Shoulder Peak	Priority Peak	Total
223.3885	347.436127	143.051147	713.8757

Study Period: 2007/Jan - 2007/Dec

Total Fuel & Var O&M Cost by Subperiod (M\$)

Off Peak	Shoulder Peak	Priority Peak	Total
223.388474	347.436127	143.051147	713.875732

System Study Summary - Part 1

Yr	Nn	Skip	Mrg	Cat	Hydro	Monte	Dap	Ld	Band	S. R.	S. R.	# of		Weekday On-pk		Weekend On-pk	
							flag	%	MW	%	MW	Wdays	1st hr	Last hr	1st hr	Last hr	
2007	1	0	-1	10.0	10.0	2		0.0	0.0	0.0	0.0	7	7	20	1	24	

System Study Summary - Part 2

Yr	Mn	EUE Cost	EUE Cost esc	Pump Cost	Dump Cost esc	NOx Cost	SOx Cost	CO2 Cost	NOG Cost	POL Cost	Min Resv	Max Resv	Dcen Rate	Base Year
2007	1	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				

File: H07TYD1.STU

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Report Control Summary

Yr	Mn	Fiscal Yr		Rpt	Prd	Yrly		Stat		Plant		Area		PS Cnt/Dsp		Hrly		Wely		Mnth		Yrly		Capital		PGMW	Opt
		Last	Mn			Rpt	Prd	Rpt	Prd	Rpt	Prd	Rpt	Prd	Rpt	Prd	Graph	Graph	Graph	Graph	Graph	Graph	Graph	Graph	Expend	Alloc		
2007	1	12			2	0		1		1		0		1		1		1		1		1		0		0	

File: H07TYD1.RFC

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Report Control Summary - HECO specific

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Yr	Mn	MWh or KWh
2007	1	0

File: H02TYD1.RFC

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Area Summary

Yr	Mn	Id	Name	S.R. %	S.R. MW	Ld Adj %	Ld Adj MW	Cap	Eng Tle	Eng Tle Cost	Eng Tle esc	Eng Tle Imp Tle	Exp Tle	Min Gen
2007	1	1	heco	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00	0.0	0.0	0.0

File: H077Y01.APA

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Plant Summary

Yr	Mn	Id	Name
2007	1	1	Kahe
2007	1	2	Waiau
2007	1	3	Kailashoa
2007	1	4	AES
2007	1	5	HPOWER
2007	1	6	Honolulu
2007	1	8	NeaSite1
2007	1	9	DG Sub

File: H071Y01.PLT

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Plant Summary - HECO specific

Yr	Ln	Id	Name	NOx Cost	SOx Cost	CO2 Cost	ROG Cost	Other Cost
2007	1	1	Kahe	0.00	0.00	0.00	0.00	0.00
2007	1	2	Waiau	0.00	0.00	0.00	0.00	0.00
2007	1	3	Kalaheoa	0.00	0.00	0.00	0.00	0.00
2007	1	4	AES	0.00	0.00	0.00	0.00	0.00
2007	1	5	HPower	0.00	0.00	0.00	0.00	0.00
2007	1	6	Honolulu	0.00	0.00	0.00	0.00	0.00
2007	1	8	Newsite1	0.00	0.00	0.00	0.00	0.00
2007	1	9	DG Sub	0.00	0.00	0.00	0.00	0.00

File: H07TYD1.PLT

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Fuel Class Summary

P

Yr	Mn	Id	Name	Unit
2007	1	1	LSFO	1 BBL
2007	1	2	DIESEL	1 BBL
2007	1	3	HECOCOAL	3 TON
2007	1	4	AES	1 BBL
2007	1	5	KALAELOA	1 BBL
2007	1	6	NAPHTHA	1 BBL
2007	1	7	REFUSE	1 BBL
2007	1	8	LdMgmt	1 BBL
2007	1	9	DG SUB	1 BBL

Spot Fuel Summary

Yr	Mn	Id	Name	Class	Fuel Cost	Repl Cost	Cost Esc	Heat Content	SDx	CO2	ROG	Other
2007	1	1	WLSFO	1 LSF0	1050.0	0.0	0.0	6.20	0.0000	0.0000	0.0000	0.0000
2007	7	1	WLSFO	1 LSF0	1050.0	0.0	0.0	6.20	0.0000	0.0000	0.0000	0.0000
2007	1	2	KLSP0	1 LSF0	1050.0	0.0	0.0	6.20	0.0000	0.0000	0.0000	0.0000
2007	7	2	KLSP0	1 LSF0	1050.0	0.0	0.0	6.20	0.0000	0.0000	0.0000	0.0000
2007	1	3	HLSP0	1 LSF0	1100.0	0.0	0.0	6.20	0.0000	0.0000	0.0000	0.0000
2007	7	3	HLSP0	1 LSF0	1100.0	0.0	0.0	6.20	0.0000	0.0000	0.0000	0.0000
2007	1	4	DG SUB	9 DG SUB	1757.7	0.0	0.0	5.86	0.0000	0.0000	0.0000	0.0000
2007	7	4	DG SUB	9 DG SUB	1757.7	0.0	0.0	5.86	0.0000	0.0000	0.0000	0.0000
2007	1	5	DIESEL	2 DIESEL	1697.2	0.0	0.0	5.86	0.0000	0.0000	0.0000	0.0000
2007	7	5	DIESEL	2 DIESEL	1697.2	0.0	0.0	5.86	0.0000	0.0000	0.0000	0.0000
2007	1	6	HECOAL	3 HECOCAL	180.0	0.0	0.0	21.60	0.0000	0.0000	0.0000	0.0000
2007	7	6	HECOAL	3 HECOCAL	180.0	0.0	0.0	21.60	0.0000	0.0000	0.0000	0.0000
2007	1	7	AES	4 AES	159.4	0.0	0.0	1.00	0.0000	0.0000	0.0000	0.0000
2007	7	7	AES	4 AES	159.4	0.0	0.0	1.00	0.0000	0.0000	0.0000	0.0000
2007	1	8	KALAELOA	5 KALAELOA	1126.6	0.0	0.0	6.00	0.0000	0.0000	0.0000	0.0000
2007	7	8	KALAELOA	5 KALAELOA	1126.6	0.0	0.0	6.00	0.0000	0.0000	0.0000	0.0000
2007	1	9	NAPHTHA	6 NAPHTHA	400.0	0.0	0.0	5.01	0.0000	0.0000	0.0000	0.0000
2007	7	9	NAPHTHA	6 NAPHTHA	400.0	0.0	0.0	5.01	0.0000	0.0000	0.0000	0.0000
2007	1	10	REFUSE	7 REFUSE	0.0	0.0	0.0	6.20	0.0000	0.0000	0.0000	0.0000
2007	7	10	REFUSE	7 REFUSE	0.0	0.0	0.0	6.20	0.0000	0.0000	0.0000	0.0000
2007	1	11	LONGMT	8 LdMgmt	0.0	99999.0	0.0	1.00	0.0000	0.0000	0.0000	0.0000
2007	7	11	LONGMT	8 LdMgmt	0.0	99999.0	0.0	1.00	0.0000	0.0000	0.0000	0.0000

File: H07TYD1.SFU

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Thermal Basic Summary

Yr	Mn	Id	Name	Area	Plant	#	Unit	Br	Cap	Brnh	Firm	Type	Op	Okt	FE	Br	Min	Min	Ramp	Owner	Constrb	GR	VOM	Emas	VOM	Emas	SOx	Scrub	Eff
2007	1	1	Honolu 8	1 heco	6 Honolu	1	0	0	0	0	0	3	0	0	0	0	3	3	9999	100.0	100.0	1	0	1	0	1	0	0.0	
2007	1	2	Honolu 9	1 heco	6 Honolu	1	0	0	0	0	0	3	0	0	0	0	3	3	9999	100.0	100.0	1	0	1	0	1	0	0.0	
2007	1	3	Waiau 3	1 heco	2 Waiau	1	0	0	0	0	0	3	0	0	0	0	3	3	9999	100.0	100.0	1	0	1	0	1	0	0.0	
2007	1	4	Waiau 4	1 heco	2 Waiau	1	0	0	0	0	0	3	0	0	0	0	3	3	9999	100.0	100.0	1	0	1	0	1	0	0.0	
2007	1	5	Waiau 5	1 heco	2 Waiau	1	0	0	0	0	0	3	0	0	0	0	3	3	9999	100.0	100.0	1	0	1	0	1	0	0.0	
2007	1	6	Waiau 6	1 heco	2 Waiau	1	0	0	0	0	0	3	0	0	0	0	3	3	9999	100.0	100.0	1	0	1	0	1	0	0.0	
2007	1	7	Waiau 7	1 heco	2 Waiau	1	0	0	0	0	0	3	0	0	0	0	3	3	9999	100.0	100.0	1	0	1	0	1	0	0.0	
2007	1	8	Waiau 8	1 heco	2 Waiau	1	0	0	0	0	0	1	0	0	0	0	1	1	9999	100.0	100.0	1	0	1	0	1	0	0.0	
2007	1	9	Waiau 9	1 heco	2 Waiau	1	0	0	0	0	0	5	0	0	0	0	1	1	9999	100.0	100.0	1	0	1	0	1	0	0.0	
2007	1	10	Waiau 10	1 heco	2 Waiau	1	0	0	0	0	0	5	0	0	0	0	1	1	9999	100.0	100.0	1	0	1	0	1	0	0.0	
2007	1	11	Kahe 1	1 heco	1 Kahe	1	0	0	0	0	0	1	0	0	0	0	1	1	9999	100.0	100.0	1	0	1	0	1	0	0.0	
2007	1	12	Kahe 2	1 heco	1 Kahe	1	0	0	0	0	0	1	0	0	0	0	1	1	9999	100.0	100.0	1	0	1	0	1	0	0.0	
2007	1	13	Kahe 3	1 heco	1 Kahe	1	0	0	0	0	0	1	0	0	0	0	1	1	9999	100.0	100.0	1	0	1	0	1	0	0.0	
2007	1	14	Kahe 4	1 heco	1 Kahe	1	0	0	0	0	0	1	0	0	0	0	1	1	9999	100.0	100.0	1	0	1	0	1	0	0.0	
2007	1	15	Kahe 5	1 heco	1 Kahe	1	0	0	0	0	0	1	0	0	0	0	1	1	9999	100.0	100.0	1	0	1	0	1	0	0.0	
2007	1	16	Kahe 6	1 heco	1 Kahe	1	0	0	0	0	0	1	0	0	0	0	1	1	9999	100.0	100.0	1	0	1	0	1	0	0.0	
2007	1	17	Kala CC	1 heco	3 Kala	1	0	0	0	0	0	1	0	0	0	0	1	1	9999	100.0	100.0	1	0	1	0	1	0	0.0	
2007	1	18	Kala CC	1 heco	3 Kala	1	-2	0	0	0	0	1	0	0	0	0	1	1	9999	100.0	100.0	1	0	1	0	1	0	0.0	
2007	1	19	AES	1 heco	4 AES	1	-3	0	0	0	0	1	0	0	0	0	1	1	9999	100.0	100.0	1	0	1	0	1	0	0.0	
2007	1	20	HPOWER	1 heco	5 HPOWER	1	-5	0	0	0	0	1	0	0	0	0	1	1	9999	100.0	100.0	1	0	1	0	1	0	0.0	
2007	1	21	Kala CC	1 heco	3 Kala	1	-1	0	0	0	0	1	0	0	0	0	1	1	9999	100.0	100.0	1	0	1	0	1	0	0.0	
2007	1	22	DG Sub	1 heco	9 DG Sub	1	-4	0	0	0	0	1	0	0	0	0	1	1	9999	100.0	100.0	1	0	1	0	1	0	0.0	
2007	1	23	DG Sub	1 heco	9 DG Sub	1	-4	0	0	0	0	1	0	0	0	0	1	1	9999	100.0	100.0	1	0	1	0	1	0	0.0	
2007	1	43	RIDER1	1 heco	7	1	0	0	0	0	0	5	0	0	0	0	0	0	9999	100.0	100.0	1	0	1	0	1	0	0.0	

Thermal Cost and Variable Summary

P

Yr	Mn	Id	Name	Spot Fuel	Stp Fuel	Startup Pl Req	Startup Cost	VOM Cost	VOM Esc	FOR Cost	FOR Esc	Capital Cost	Eng Int Fuel	VOM Plg	Commit Plnt	Depth Plnt	Transm Loss	SU Cat Fctr	Relv VOM
2007	1	1	Honolu 8	3 HLSFO	3 HLSFO	190.	0.	0.00	0.0	0.	0.0	0.00	0	0	0.99700	0.99700	1.00000	0.00	0.00
2007	1	2	Honolu 9	3 HLSFO	3 HLSFO	190.	0.	0.00	0.0	0.	0.0	0.00	0	0	0.99700	0.99700	1.00000	0.00	0.00
2007	1	3	Waiau 3	1 WLSFO	1 WLSFO	337.	0.	0.00	0.0	0.	0.0	0.00	0	0	1.00600	1.00600	1.00000	0.00	0.00
2007	1	4	Waiau 4	1 WLSFO	1 WLSFO	337.	0.	0.00	0.0	0.	0.0	0.00	0	0	1.00600	1.00600	1.00000	0.00	0.00
2007	1	5	Waiau 5	1 WLSFO	1 WLSFO	277.	0.	0.00	0.0	0.	0.0	0.00	0	0	1.01200	1.01200	1.00000	0.00	0.00
2007	1	6	Waiau 6	1 WLSFO	1 WLSFO	277.	0.	0.00	0.0	0.	0.0	0.00	0	0	1.01200	1.01200	1.00000	0.00	0.00
2007	1	7	Waiau 7	1 WLSFO	1 WLSFO	277.	0.	0.00	0.0	0.	0.0	0.00	0	0	1.01200	1.01200	1.00000	0.00	0.00
2007	1	8	Waiau 8	1 WLSFO	1 WLSFO	5044.	0.	0.00	0.0	0.	0.0	0.00	0	0	1.01200	1.01200	1.00000	0.00	0.00
2007	1	9	Waiau 9	1 WLSFO	1 WLSFO	5044.	0.	0.00	0.0	0.	0.0	0.00	0	0	1.01200	1.01200	1.00000	0.00	0.00
2007	1	10	Waiau 10	5 DIESEL	5 DIESEL	11.	0.	0.00	0.0	0.	0.0	0.00	0	0	1.01200	1.01200	1.00000	0.00	0.00
2007	1	11	Kahe 1	2 KLSFO	2 KLSFO	5044.	0.	0.00	0.0	0.	0.0	0.00	0	0	1.02600	1.02600	1.00000	0.00	0.00
2007	1	12	Kahe 2	2 KLSFO	2 KLSFO	5044.	0.	0.00	0.0	0.	0.0	0.00	0	0	1.02600	1.02600	1.00000	0.00	0.00
2007	1	13	Kahe 3	2 KLSFO	2 KLSFO	5044.	0.	0.00	0.0	0.	0.0	0.00	0	0	1.02600	1.02600	1.00000	0.00	0.00
2007	1	14	Kahe 4	2 KLSFO	2 KLSFO	5044.	0.	0.00	0.0	0.	0.0	0.00	0	0	1.02600	1.02600	1.00000	0.00	0.00
2007	1	15	Kahe 5	2 KLSFO	2 KLSFO	4586.	0.	0.00	0.0	0.	0.0	0.00	0	0	1.02600	1.02600	1.00000	0.00	0.00
2007	1	16	Kahe 6	2 KLSFO	2 KLSFO	9274.	0.	0.00	0.0	0.	0.0	0.00	0	0	1.02600	1.02600	1.00000	0.00	0.00
2007	1	17	Kala CC	8 KALAELOA	8 KALAELOA	0.	0.	0.00	0.0	0.	0.0	0.00	0	0	1.02900	1.02900	1.00000	0.00	0.00
2007	1	18	Kala CC	8 KALAELOA	8 KALAELOA	0.	0.	0.00	0.0	0.	0.0	0.00	0	0	1.02900	1.02900	1.00000	0.00	0.00
2007	1	19	AES	7 AES	7 AES	0.	0.	0.00	0.0	0.	0.0	0.00	0	0	1.02900	1.02900	1.00000	0.00	0.00
2007	1	20	HPower	10 REFUSE	10 REFUSE	0.	0.	0.00	0.0	0.	0.0	0.00	0	0	1.02900	1.02900	1.00000	0.00	0.00
2007	1	21	Kala CC	8 KALAELOA	8 KALAELOA	0.	0.	0.00	0.0	0.	0.0	0.00	0	0	1.02900	1.02900	1.00000	0.00	0.00
2007	1	23	DG Sub	4 DG SUB	4 DG SUB	0.	0.	0.00	0.0	0.	0.0	0.00	0	0	1.00000	1.00000	1.00000	0.00	0.00
2007	1	40		11 LDNGMT	11 LDNGMT	999.	0.	0.00	0.0	0.	0.0	0.00	0	0	1.00000	1.00000	1.00000	0.00	0.00
2007	1	41		11 LDNGMT	11 LDNGMT	999.	0.	0.00	0.0	0.	0.0	0.00	0	0	1.00000	1.00000	1.00000	0.00	0.00
2007	1	42		11 LDNGMT	11 LDNGMT	999.	0.	0.00	0.0	0.	0.0	0.00	0	0	1.00000	1.00000	1.00000	0.00	0.00
2007	1	43	RIDERI	11 LDNGMT	11 LDNGMT	999.	0.	0.00	0.0	0.	0.0	0.00	0	0	1.00000	1.00000	1.00000	0.00	0.00

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Date

Thermal Performance Summary

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Yr	Mn	Id	Name	State 1	State 2	State 3	State 4	State 5	State 6	State 7	State 8	Avg 6 Min	FOR	MOR
2007	1	1	Honolu 8	22.30000000 36.4132000 0.00000000	32.50000000 10.3115000 0.0056800	42.70000000 0.0056800 0.00000000	52.90000000 0.00000000 0.00000000	0.00000000 0.00000000 0.00000000	0.00000000 0.00000000 0.00000000	0.00000000 0.00000000 0.00000000	0.00000000 0.00000000 0.00000000			
			I/O Coeff Availability											
2007	1	2	Honolu 9	22.50000000 69.8920000 0.00000000	33.10000000 8.9484000 0.00000000	43.80000000 0.0220400 0.00000000	54.40000000 0.00000000 0.00000000	0.00000000 0.00000000 0.00000000	0.00000000 0.00000000 0.00000000	0.00000000 0.00000000 0.00000000	0.00000000 0.00000000 0.00000000		12.80	0.0
			I/O Coeff Availability											
2007	1	3	Waiau 3	22.10000000 146.5394000 0.00000000	30.10000000 4.8113000 0.00000000	38.20000000 0.0854400 0.00000000	46.20000000 0.00000000 0.00000000	0.00000000 0.00000000 0.00000000	0.00000000 0.00000000 0.00000000	0.00000000 0.00000000 0.00000000	0.00000000 0.00000000 0.00000000		12.80	0.0
			I/O Coeff Availability											
2007	1	4	Waiau 4	22.30000000 49.4604000 9.3112000	30.30000000 0.00000000 0.00000000	38.40000000 0.0320300 0.00000000	46.40000000 0.00000000 0.00000000	0.00000000 0.00000000 0.00000000	0.00000000 0.00000000 0.00000000	0.00000000 0.00000000 0.00000000	0.00000000 0.00000000 0.00000000		33.50	0.0
			I/O Coeff Availability											
2007	1	5	Waiau 5	22.60000000 61.0595000 0.00000000	33.30000000 8.8137000 0.00000000	43.90000000 0.0298100 0.00000000	54.60000000 0.00000000 0.00000000	0.00000000 0.00000000 0.00000000	0.00000000 0.00000000 0.00000000	0.00000000 0.00000000 0.00000000	0.00000000 0.00000000 0.00000000		12.80	0.0
			I/O Coeff Availability											
2007	1	6	Waiau 6	22.50000000 64.1104000 0.00000000	32.90000000 8.7407000 0.0319900	43.30000000 0.00000000 0.00000000	53.70000000 0.00000000 0.00000000	0.00000000 0.00000000 0.00000000	0.00000000 0.00000000 0.00000000	0.00000000 0.00000000 0.00000000	0.00000000 0.00000000 0.00000000		2.90	0.0
			I/O Coeff Availability											
2007	1	7	Waiau 7	32.70000000 88.2107000 0.00000000	49.50000000 7.9405000 0.00000000	66.40000000 0.0196100 0.00000000	83.20000000 0.00000000 0.00000000	0.00000000 0.00000000 0.00000000	0.00000000 0.00000000 0.00000000	0.00000000 0.00000000 0.00000000	0.00000000 0.00000000 0.00000000		2.90	0.0
			I/O Coeff Availability											
2007	1	8	Waiau 8	32.70000000 86.8712000 0.00000000	50.50000000 8.0919000 0.00000000	68.30000000 0.0131500 0.00000000	86.20000000 0.00000000 0.00000000	0.00000000 0.00000000 0.00000000	0.00000000 0.00000000 0.00000000	0.00000000 0.00000000 0.00000000	0.00000000 0.00000000 0.00000000		7.70	0.0
			I/O Coeff Availability											
2007	1	9	Waiau 9	6.00000000 198.6939000 0.00000000	21.00000000 7.8497000 0.00000000	35.00000000 0.0292200 0.00000000	52.90000000 0.00000000 0.00000000	0.00000000 0.00000000 0.00000000	0.00000000 0.00000000 0.00000000	0.00000000 0.00000000 0.00000000	0.00000000 0.00000000 0.00000000		7.70	0.0
			I/O Coeff Availability											
2007	1	10	Waiau 10	6.00000000 191.3958000 0.00000000	21.00000000 7.2757000 0.00000000	35.00000000 0.0285100 0.00000000	49.90000000 0.00000000 0.00000000	0.00000000 0.00000000 0.00000000	0.00000000 0.00000000 0.00000000	0.00000000 0.00000000 0.00000000	0.00000000 0.00000000 0.00000000		10.00	0.0
			I/O Coeff Availability											
2007	1	11	Kahe 1	32.60000000 73.4991000 0.00000000	49.20000000 8.1733000 0.00000000	65.80000000 0.0129200 0.00000000	82.30000000 0.00000000 0.00000000	0.00000000 0.00000000 0.00000000	0.00000000 0.00000000 0.00000000	0.00000000 0.00000000 0.00000000	0.00000000 0.00000000 0.00000000		10.00	0.0
			I/O Coeff Availability											
2007	1	12	Kahe 2	32.80000000 46.0037000 0.00000000	49.30000000 9.0952000 0.00000000	65.90000000 0.0035000 0.00000000	82.40000000 0.00000000 0.00000000	0.00000000 0.00000000 0.00000000	0.00000000 0.00000000 0.00000000	0.00000000 0.00000000 0.00000000	0.00000000 0.00000000 0.00000000		4.30	0.0
			I/O Coeff Availability											
2007	1	13	Kahe 3	32.70000000 57.4864000 0.00000000	50.50000000 8.5169000 0.00000000	68.40000000 0.0063400 0.00000000	86.30000000 0.00000000 0.00000000	0.00000000 0.00000000 0.00000000	0.00000000 0.00000000 0.00000000	0.00000000 0.00000000 0.00000000	0.00000000 0.00000000 0.00000000		4.30	0.0
			I/O Coeff Availability											
2007	1	14	Kahe 4	32.70000000 75.5539000 0.00000000	50.20000000 8.4394000 0.00000000	67.80000000 0.0073900 0.00000000	85.30000000 0.00000000 0.00000000	0.00000000 0.00000000 0.00000000	0.00000000 0.00000000 0.00000000	0.00000000 0.00000000 0.00000000	0.00000000 0.00000000 0.00000000		7.70	0.0
			I/O Coeff Availability											
2007	1	15	Kahe 5	50.40000000 89.3444000 0.00000000	78.50000000 8.6434000 0.00000000	106.6000000 0.0030500 0.00000000	134.7000000 0.0000000 0.00000000	0.00000000 0.00000000 0.00000000	0.00000000 0.00000000 0.00000000	0.00000000 0.00000000 0.00000000	0.00000000 0.00000000 0.00000000		5.50	0.0
			I/O Coeff Availability											

Thermal Performance Summary

P

Yr	Mn	Id	Name		State 1	State 2	State 3	State 4	State 5	State 6	State 7	State 8	Avg @ Min	FOR	MOR
2007	1	16	Kahe 6	MW	49.8000000	77.8000000	105.9000000	133.9000000	0.0000000	0.0000000	0.0000000	0.0000000			
				I/O Coeff	117.0609000	8.1819000	0.0076900	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000			
				Availability	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000			
2007	1	17	Kala CC	MW	32.5000000	51.6700000	70.8333360	90.0000000	0.0000000	0.0000000	0.0000000	0.0000000		4.90	0.0
				I/O Coeff	299.0260000	4.4287730	0.0093080	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000			
				Availability	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000			
2007	1	18	Kala CC	MW	32.5000000	51.6700000	70.8333360	90.0000000	0.0000000	0.0000000	0.0000000	0.0000000		1.50	0.0
				I/O Coeff	299.0260000	4.4287730	0.0093080	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000			
				Availability	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000			
2007	1	19	AES	MW	63.0000000	102.0000000	141.0000000	180.0000000	0.0000000	0.0000000	0.0000000	0.0000000		1.50	0.0
				I/O Coeff	258.7479000	14.9713000	0.0051019	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000			
				Availability	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000			
2007	1	20	HPOWER	MW	25.0000000	32.0000000	39.0000000	46.0000000	0.0000000	0.0000000	0.0000000	0.0000000		1.00	0.0
				I/O Coeff	10.0000000	8.2000000	0.0001000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000			
				Availability	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000			
2007	1	21	Kala CC	MW	0.1000000	9.3000000	18.7000000	28.0000000	0.0000000	0.0000000	0.0000000	0.0000000		0.00	0.0
				I/O Coeff	0.0100000	8.6408020	0.0000010	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000			
				Availability	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000			
2007	1	23	DG Sub	MW	0.1000000	8.2000000	16.4000000	24.6000000	0.0000000	0.0000000	0.0000000	0.0000000		1.50	0.0
				I/O Coeff	1.0000000	0.0000001	0.0000001	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000			
				Availability	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000			
2007	3	23	DG Sub	MW	0.1000000	9.8400000	19.6800000	29.5200000	0.0000000	0.0000000	0.0000000	0.0000000		0.00	0.0
				I/O Coeff	1.0000000	0.0000001	0.0000001	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000			
				Availability	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000			
2007	8	23	DG Sub	MW	0.1000000	10.3900000	20.7800000	31.1600000	0.0000000	0.0000000	0.0000000	0.0000000		0.00	0.0
				I/O Coeff	1.0000000	0.0000001	0.0000001	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000			
				Availability	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000			
2007	1	43	RIDER1	MW	0.1000000	1.7000000	3.3000000	5.0000000	0.0000000	0.0000000	0.0000000	0.0000000		0.00	0.0
				I/O Coeff	2.0000000	2.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000			
				Availability	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000		0.00	0.0

Thermal Maintenance Summary

P

Id	Name	Year	Month	Day	# of Days
1	Honolu 8	2007	4	15	13
1	Honolu 8	2007	11	30	32
2	Honolu 9	2007	1	1	12
2	Honolu 9	2007	11	4	13
3	Waiau 3	2007	4	1	13
4	Waiau 4	2007	6	17	13
5	Waiau 5	2007	9	16	62
6	Waiau 6	2007	8	12	13
7	Waiau 7	2007	2	24	70
7	Waiau 7	2007	12	9	20
8	Waiau 8	2007	1	14	13
8	Waiau 8	2007	11	25	13
9	Waiau 9	2007	5	6	34
11	Kahe 1	2007	1	1	40
12	Kahe 2	2007	3	11	20
13	Kahe 3	2007	6	9	91
14	Kahe 4	2007	10	20	14
15	Kahe 5	2007	5	6	20
16	Kahe 6	2007	5	27	12

Fixed Energy Transaction Summary

P

Yr	No	Id	Name	Type	Area	Firm	Min Cap	Max Cap	Energy Cost	Energy Cap	Capacity Cost	Capacity Cap	PK Def	# of Wkdays	Weekday On-pk 1st hr Last hr	Weekend On-pk 1st hr Last hr
2007	1	1	UtilCHP	6 Constant Purchase	1 heco	1	0.00	0.00	0.000	0.000	15.06	0.0	0.0	0		
2007	7	1	UtilCHP	6 Constant Purchase	1 heco	1	0.00	0.00	0.000	0.000	15.06	0.0	0.0	0		
2007	1	2	Non-Firm	6 Constant Purchase	1 heco	1	0.67	0.67	0.000	0.000	64.74	0.0	0.0	0		

File: H07TYD1.THF

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Load Summary

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2007	Peak (MW)	Energy (GWH)
January	1,192	655.73
February	1,185	589.01
March	1,168	663.82
April	1,194	645.30
May	1,212	679.69
June	1,206	679.80
July	1,250	705.01
August	1,281	725.80
September	1,272	707.21
October	1,287	719.89
November	1,266	671.40
December	1,230	666.70
2007 :	1,287	8,109.33

Hawaiian Electric Company, Inc.

TEST YEAR 2007

Direct Testimony

QLPU Input File - H07TYD1.QLP

Unit ID	Unit Loading Point (MW)										QLPU Capability (MW)									
	1	2	3	4	5	6	7	8	9	10	1	2	3	4	5	6	7	8	9	10
1	18	23	28	33	38	42	47	52			21	19	16	15	11	8	4	0	0	
2	19	23	28	33	38	43	48	52	57		27	23	19	16	13	9	5	2	0	
3	18	23	28	33	38	42	47	52			24	20	15	12	8	4	1	0		
4	18	23	28	33	38	43	47	52			24	20	15	12	8	4	1	0		
5	19	24	28	33	38	43	48	53	58		24	20	17	15	11	8	4	2	0	
6	19	23	28	33	38	43	48	53	58		24	20	18	15	11	8	4	1	0	
7	23	47	52	57	62	67	72	76	81	86	27	18	16	13	11	8	5	2	1	0
8	23	47	52	57	62	67	72	76	81	86	27	18	16	13	11	8	5	2	1	0
9	5	10	15	20	25	30	35	40	45	50	40	35	31	27	23	18	13	8	1	0
10	5	10	15	20	25	30	35	40	45	50	40	35	31	27	23	18	13	8	1	0
11	23	28	52	57	62	67	72	76	81	86	32	30	16	13	11	8	5	3	1	0
12	23	28	52	57	62	67	72	77	81	86	32	30	16	13	11	8	5	3	1	0
13	23	28	38	42	47	67	72	77	81	86	32	27	21	19	17	9	5	3	1	0
14	23	28	38	42	47	67	72	77	81	86	32	27	21	19	17	9	5	3	1	0
15	50	55	65	75	84	94	104	113	123	134	49	47	41	35	29	23	17	12	6	0
16	41	55	65	75	84	94	104	113	123	134	52	44	38	32	26	20	15	9	3	0
17	33	93									34	0								
18	33	93									34	0								
19	63	180									0	0								
20	10	20	30	46							0	0	0	0						

Hawaiian Electric Company, Inc.

**TEST YEAR 2007
Direct Testimony**

Spinning Reserve Input File - H07TYD1.SPN

Day of Week Starting					Day of Week Starting				
Year	Month	Monday = 1	Hour	MW	Year	Month	Monday = 1	Hour	MW
2007	1	1	1	180	2007	1	2	16	180
2007	1	1	2	180	2007	1	2	17	180
2007	1	1	3	180	2007	1	2	18	180
2007	1	1	4	180	2007	1	2	19	180
2007	1	1	5	180	2007	1	2	20	180
2007	1	1	6	180	2007	1	2	21	180
2007	1	1	7	180	2007	1	2	22	180
2007	1	1	8	180	2007	1	2	23	180
2007	1	1	9	180	2007	1	2	24	180
2007	1	1	10	180	2007	1	3	1	180
2007	1	1	11	180	2007	1	3	2	180
2007	1	1	12	180	2007	1	3	3	180
2007	1	1	13	180	2007	1	3	4	180
2007	1	1	14	180	2007	1	3	5	180
2007	1	1	15	180	2007	1	3	6	180
2007	1	1	16	180	2007	1	3	7	180
2007	1	1	17	180	2007	1	3	8	180
2007	1	1	18	180	2007	1	3	9	180
2007	1	1	19	180	2007	1	3	10	180
2007	1	1	20	180	2007	1	3	11	180
2007	1	1	21	180	2007	1	3	12	180
2007	1	1	22	180	2007	1	3	13	180
2007	1	1	23	180	2007	1	3	14	180
2007	1	1	24	180	2007	1	3	15	180
2007	1	2	1	180	2007	1	3	16	180
2007	1	2	2	180	2007	1	3	17	180
2007	1	2	3	180	2007	1	3	18	180
2007	1	2	4	180	2007	1	3	19	180
2007	1	2	5	180	2007	1	3	20	180
2007	1	2	6	180	2007	1	3	21	180
2007	1	2	7	180	2007	1	3	22	180
2007	1	2	8	180	2007	1	3	23	180
2007	1	2	9	180	2007	1	3	24	180
2007	1	2	10	180	2007	1	4	1	180
2007	1	2	11	180	2007	1	4	2	180
2007	1	2	12	180	2007	1	4	3	180
2007	1	2	13	180	2007	1	4	4	180
2007	1	2	14	180	2007	1	4	5	180
2007	1	2	15	180	2007	1	4	6	180

Hawaiian Electric Company, Inc.

**TEST YEAR 2007
Direct Testimony**

Spinning Reserve Input File - H07TYD1.SPN

Day of Week Starting					Day of Week Starting				
Year	Month	Monday = 1	Hour	MW	Year	Month	Monday = 1	Hour	MW
2007	1	4	7	180	2007	1	5	22	180
2007	1	4	8	180	2007	1	5	23	180
2007	1	4	9	180	2007	1	5	24	180
2007	1	4	10	180	2007	1	6	1	180
2007	1	4	11	180	2007	1	6	2	180
2007	1	4	12	180	2007	1	6	3	180
2007	1	4	13	180	2007	1	6	4	180
2007	1	4	14	180	2007	1	6	5	180
2007	1	4	15	180	2007	1	6	6	180
2007	1	4	16	180	2007	1	6	7	180
2007	1	4	17	180	2007	1	6	8	180
2007	1	4	18	180	2007	1	6	9	180
2007	1	4	19	180	2007	1	6	10	180
2007	1	4	20	180	2007	1	6	11	180
2007	1	4	21	180	2007	1	6	12	180
2007	1	4	22	180	2007	1	6	13	180
2007	1	4	23	180	2007	1	6	14	180
2007	1	4	24	180	2007	1	6	15	180
2007	1	5	1	180	2007	1	6	16	180
2007	1	5	2	180	2007	1	6	17	180
2007	1	5	3	180	2007	1	6	18	180
2007	1	5	4	180	2007	1	6	19	180
2007	1	5	5	180	2007	1	6	20	180
2007	1	5	6	180	2007	1	6	21	180
2007	1	5	7	180	2007	1	6	22	180
2007	1	5	8	180	2007	1	6	23	180
2007	1	5	9	180	2007	1	6	24	180
2007	1	5	10	180	2007	1	7	1	180
2007	1	5	11	180	2007	1	7	2	180
2007	1	5	12	180	2007	1	7	3	180
2007	1	5	13	180	2007	1	7	4	180
2007	1	5	14	180	2007	1	7	5	180
2007	1	5	15	180	2007	1	7	6	180
2007	1	5	16	180	2007	1	7	7	180
2007	1	5	17	180	2007	1	7	8	180
2007	1	5	18	180	2007	1	7	9	180
2007	1	5	19	180	2007	1	7	10	180
2007	1	5	20	180	2007	1	7	11	180
2007	1	5	21	180	2007	1	7	12	180

Hawaiian Electric Company, Inc.

**TEST YEAR 2007
Direct Testimony**

Spinning Reserve Input File - H07TYD1.SPN

Year	Month	Day of Week Monday = 1	Starting Hour	MW
2007	1	7	13	180
2007	1	7	14	180
2007	1	7	15	180
2007	1	7	16	180
2007	1	7	17	180
2007	1	7	18	180
2007	1	7	19	180
2007	1	7	20	180
2007	1	7	21	180
2007	1	7	22	180
2007	1	7	23	180
2007	1	7	24	180

Pattern 1

Year	Month	Day of Month	Hour	Capacity Multiplier	VOM Multiplier
2007	1	1	0	0.87	1
2007	1	20	0	0.5	1
2007	2	1	0	0.5	1
2007	2	5	0	0.87	1
2007	3	1	0	0.87	1
2007	4	1	0	0.87	1
2007	5	1	0	0.87	1
2007	6	1	0	0.87	1
2007	7	1	0	0.87	1
2007	7	14	0	0.5	1
2007	7	30	0	0.87	1
2007	8	1	0	0.87	1
2007	9	1	0	0.87	1
2007	10	1	0	0.87	1
2007	11	1	0	0.87	1
2007	12	1	0	0.87	1

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Pattern 2

Year	Month	Day of Week Monday = 1	Hour	Capacity Multiplier	VOM Multiplier	Year	Month	Day of Week Monday = 1	Hour	Capacity Multiplier	VOM Multiplier	Year	Month	Day of Week Monday = 1	Hour	Capacity Multiplier	VOM Multiplier
2007	1	1	0	1	1	2007	6	1	0	1	1	2007	9	23	0	1	1
2007	1	5	21	0	1	2007	6	1	21	0	1	2007	9	29	0	0	1
2007	1	6	9	1	1	2007	6	2	9	1	1	2007	9	30	0	1	1
2007	1	6	21	0	1	2007	6	2	21	0	1	2007	10	1	0	1	1
2007	1	7	9	1	1	2007	6	3	9	1	1	2007	10	5	21	0	1
2007	1	12	21	0	1	2007	6	8	21	0	1	2007	10	6	9	1	1
2007	1	13	9	1	1	2007	6	9	9	1	1	2007	10	6	21	0	1
2007	1	13	21	0	1	2007	6	9	21	0	1	2007	10	7	9	1	1
2007	1	14	9	1	1	2007	6	10	9	1	1	2007	10	12	21	0	1
2007	1	19	21	0	1	2007	6	15	21	0	1	2007	10	13	9	1	1
2007	1	20	9	1	1	2007	6	16	9	1	1	2007	10	13	21	0	1
2007	1	20	21	0	1	2007	6	16	21	0	1	2007	10	14	9	1	1
2007	1	21	9	1	1	2007	6	17	9	1	1	2007	10	19	21	0	1
2007	1	26	21	0	1	2007	6	22	21	0	1	2007	10	20	9	1	1
2007	1	27	9	1	1	2007	6	23	9	1	1	2007	10	20	21	0	1
2007	1	28	0	0	1	2007	6	23	21	0	1	2007	10	21	9	1	1
2007	2	1	0	0	1	2007	6	24	9	1	1	2007	10	26	21	0	1
2007	3	1	0	0	1	2007	6	29	21	0	1	2007	10	27	9	1	1
2007	3	4	9	1	1	2007	6	30	9	1	1	2007	10	27	21	0	1
2007	3	9	21	0	1	2007	6	30	21	0	1	2007	10	28	9	1	1
2007	3	10	9	1	1	2007	7	1	0	0	1	2007	11	1	0	1	1
2007	3	10	21	0	1	2007	7	1	9	1	1	2007	11	2	21	0	1
2007	3	11	9	1	1	2007	7	6	21	0	1	2007	11	3	9	1	1
2007	3	16	21	0	1	2007	7	7	9	1	1	2007	11	3	21	0	1
2007	3	17	9	1	1	2007	7	7	21	0	1	2007	11	4	9	1	1
2007	3	17	21	0	1	2007	7	8	9	1	1	2007	11	9	21	0	1
2007	3	18	9	1	1	2007	7	13	21	0	1	2007	11	10	9	1	1
2007	3	23	21	0	1	2007	7	14	9	1	1	2007	11	10	21	0	1
2007	3	24	9	1	1	2007	7	14	21	0	1	2007	11	11	9	1	1
2007	3	24	21	0	1	2007	7	15	9	1	1	2007	11	16	21	0	1
2007	3	25	9	1	1	2007	7	20	21	0	1	2007	11	17	9	1	1
2007	3	30	21	0	1	2007	7	21	9	1	1	2007	11	17	21	0	1
2007	3	31	9	1	1	2007	7	21	21	0	1	2007	11	18	9	1	1
2007	3	31	21	0	1	2007	7	22	9	1	1	2007	11	23	21	0	1
2007	4	1	0	0	1	2007	7	27	21	0	1	2007	11	24	9	1	1
2007	4	1	9	1	1	2007	7	28	9	1	1	2007	11	24	21	0	1
2007	4	6	21	0	1	2007	7	28	21	0	1	2007	11	25	9	1	1
2007	4	7	9	1	1	2007	7	29	9	1	1	2007	11	30	21	0	1
2007	4	7	21	0	1	2007	8	1	0	1	1	2007	12	1	0	0	1
2007	4	8	9	1	1	2007	8	3	21	0	1	2007	12	1	9	1	1
2007	4	13	21	0	1	2007	8	4	9	1	1	2007	12	1	21	0	1
2007	4	14	9	1	1	2007	8	4	21	0	1	2007	12	2	9	1	1
2007	4	14	21	0	1	2007	8	5	9	1	1	2007	12	7	21	0	1
2007	4	15	9	1	1	2007	8	10	21	0	1	2007	12	8	9	1	1
2007	4	20	21	0	1	2007	8	11	9	1	1	2007	12	8	21	0	1
2007	4	21	9	1	1	2007	8	11	21	0	1	2007	12	9	9	1	1
2007	4	21	21	0	1	2007	8	12	9	1	1	2007	12	14	21	0	1
2007	4	22	9	1	1	2007	8	17	21	0	1	2007	12	15	9	1	1
2007	4	27	21	0	1	2007	8	18	9	1	1	2007	12	15	21	0	1
2007	4	28	9	1	1	2007	8	18	21	0	1	2007	12	16	9	1	1
2007	4	28	21	0	1	2007	8	19	9	1	1	2007	12	21	21	0	1
2007	4	29	9	1	1	2007	8	24	21	0	1	2007	12	22	9	1	1
2007	5	1	0	1	1	2007	8	25	9	1	1	2007	12	22	21	0	1
2007	5	4	21	0	1	2007	8	25	21	0	1	2007	12	23	9	1	1
2007	5	5	9	1	1	2007	8	26	9	1	1	2007	12	28	21	0	1
2007	5	5	21	0	1	2007	8	31	21	0	1	2007	12	29	9	1	1
2007	5	6	9	1	1	2007	9	1	0	0	1	2007	12	29	21	0	1
2007	5	11	21	0	1	2007	9	1	9	1	1	2007	12	30	9	1	1
2007	5	12	9	1	1	2007	9	1	21	0	1						
2007	5	12	21	0	1	2007	9	2	9	1	1						
2007	5	13	9	1	1	2007	9	7	21	0	1						
2007	5	18	21	0	1	2007	9	8	9	1	1						
2007	5	19	9	1	1	2007	9	8	21	0	1						
2007	5	19	21	0	1	2007	9	9	9	1	1						
2007	5	20	9	1	1	2007	9	14	21	0	1						
2007	5	25	21	0	1	2007	9	15	9	1	1						
2007	5	26	9	1	1	2007	9	15	21	0	1						
2007	5	26	21	0	1	2007	9	16	9	1	1						
2007	5	27	9	1	1	2007	9	22	0	0	1						

Pattern 3

Year	Month	Day of Month	Hour	Capacity Multiplier	VOM Multiplier
2007	1	1	0	1	1
2007	2	1	0	1	1
2007	2	2	21	0	1
2007	2	3	9	1	1
2007	2	14	0	0	1
2007	2	23	0	1	1
2007	3	1	0	1	1
2007	3	3	21	0	1
2007	3	4	0	1	1
2007	4	1	0	1	1
2007	5	1	0	1	1
2007	6	1	0	1	1
2007	7	1	0	1	1
2007	8	1	0	1	1
2007	9	1	0	1	1
2007	10	1	0	1	1
2007	11	1	0	1	1
2007	12	1	0	1	1

Pattern 4

Year	Month	Day of Week Monday = 1	Hour	Capacity Multiplier	VOM Multiplier	Year	Month	Day of Week Monday = 1	Hour	Capacity Multiplier	VOM Multiplier	Year	Month	Day of Week Monday = 1	Hour	Capacity Multiplier	VOM Multiplier
2007	1	1	0	1	1	2007	6	1	0	1	1	2007	9	23	0	1	1
2007	1	5	21	0	1	2007	6	1	21	0	1	2007	9	29	0	0	1
2007	1	6	9	1	1	2007	6	2	9	1	1	2007	9	30	0	1	1
2007	1	6	21	0	1	2007	6	2	21	0	1	2007	10	1	0	1	1
2007	1	7	9	1	1	2007	6	3	9	1	1	2007	10	5	21	0	1
2007	1	12	21	0	1	2007	6	8	21	0	1	2007	10	6	9	1	1
2007	1	13	9	1	1	2007	6	9	9	1	1	2007	10	6	21	0	1
2007	1	13	21	0	1	2007	6	9	21	0	1	2007	10	7	9	1	1
2007	1	14	9	1	1	2007	6	10	9	1	1	2007	10	12	21	0	1
2007	1	19	21	0	1	2007	6	15	21	0	1	2007	10	13	9	1	1
2007	1	20	9	1	1	2007	6	16	9	1	1	2007	10	13	21	0	1
2007	1	20	21	0	1	2007	6	16	21	0	1	2007	10	14	9	1	1
2007	1	21	9	1	1	2007	6	17	9	1	1	2007	10	19	21	0	1
2007	1	26	21	0	1	2007	6	22	21	0	1	2007	10	20	9	1	1
2007	1	27	9	1	1	2007	6	23	9	1	1	2007	10	20	21	0	1
2007	1	28	0	0	1	2007	6	23	21	0	1	2007	10	21	9	1	1
2007	2	1	0	0	1	2007	6	24	9	1	1	2007	10	26	21	0	1
2007	3	1	0	0	1	2007	6	29	21	0	1	2007	10	27	9	1	1
2007	3	4	9	1	1	2007	6	30	9	1	1	2007	10	27	21	0	1
2007	3	9	21	0	1	2007	6	30	21	0	1	2007	10	28	9	1	1
2007	3	10	9	1	1	2007	7	1	0	0	1	2007	11	1	0	1	1
2007	3	10	21	0	1	2007	7	1	9	1	1	2007	11	2	21	0	1
2007	3	11	9	1	1	2007	7	6	21	0	1	2007	11	3	9	1	1
2007	3	16	21	0	1	2007	7	7	9	1	1	2007	11	3	21	0	1
2007	3	17	9	1	1	2007	7	7	21	0	1	2007	11	4	9	1	1
2007	3	17	21	0	1	2007	7	8	9	1	1	2007	11	9	21	0	1
2007	3	18	9	1	1	2007	7	13	21	0	1	2007	11	10	9	1	1
2007	3	23	21	0	1	2007	7	14	9	1	1	2007	11	10	21	0	1
2007	3	24	9	1	1	2007	7	14	21	0	1	2007	11	11	9	1	1
2007	3	24	21	0	1	2007	7	15	9	1	1	2007	11	16	21	0	1
2007	3	25	9	1	1	2007	7	20	21	0	1	2007	11	17	9	1	1
2007	3	30	21	0	1	2007	7	21	9	1	1	2007	11	17	21	0	1
2007	3	31	9	1	1	2007	7	21	21	0	1	2007	11	18	9	1	1
2007	3	31	21	0	1	2007	7	22	9	1	1	2007	11	23	21	0	1
2007	4	1	0	0	1	2007	7	27	21	0	1	2007	11	24	9	1	1
2007	4	1	9	1	1	2007	7	28	9	1	1	2007	11	24	21	0	1
2007	4	6	21	0	1	2007	7	28	21	0	1	2007	11	25	9	1	1
2007	4	7	9	1	1	2007	7	29	9	1	1	2007	11	30	21	0	1
2007	4	7	21	0	1	2007	8	1	0	1	1	2007	12	1	0	0	1
2007	4	8	9	1	1	2007	8	3	21	0	1	2007	12	1	9	1	1
2007	4	13	21	0	1	2007	8	4	9	1	1	2007	12	1	21	0	1
2007	4	14	9	1	1	2007	8	4	21	0	1	2007	12	2	9	1	1
2007	4	14	21	0	1	2007	8	5	9	1	1	2007	12	7	21	0	1
2007	4	15	9	1	1	2007	8	10	21	0	1	2007	12	8	9	1	1
2007	4	20	21	0	1	2007	8	11	9	1	1	2007	12	8	21	0	1
2007	4	21	9	1	1	2007	8	11	21	0	1	2007	12	9	9	1	1
2007	4	21	21	0	1	2007	8	12	9	1	1	2007	12	14	21	0	1
2007	4	22	9	1	1	2007	8	17	21	0	1	2007	12	15	9	1	1
2007	4	27	21	0	1	2007	8	18	9	1	1	2007	12	15	21	0	1
2007	4	28	9	1	1	2007	8	18	21	0	1	2007	12	16	9	1	1
2007	4	28	21	0	1	2007	8	19	9	1	1	2007	12	21	21	0	1
2007	4	29	9	1	1	2007	8	24	21	0	1	2007	12	22	9	1	1
2007	5	1	0	1	1	2007	8	25	9	1	1	2007	12	22	21	0	1
2007	5	4	21	0	1	2007	8	25	21	0	1	2007	12	23	9	1	1
2007	5	5	9	1	1	2007	8	26	9	1	1	2007	12	28	21	0	1
2007	5	5	21	0	1	2007	8	31	21	0	1	2007	12	29	9	1	1
2007	5	6	9	1	1	2007	9	1	0	0	1	2007	12	29	21	0	1
2007	5	11	21	0	1	2007	9	1	9	1	1	2007	12	30	9	1	1
2007	5	12	9	1	1	2007	9	1	21	0	1						
2007	5	12	21	0	1	2007	9	2	9	1	1						
2007	5	13	9	1	1	2007	9	7	21	0	1						
2007	5	18	21	0	1	2007	9	8	9	1	1						
2007	5	19	9	1	1	2007	9	8	21	0	1						
2007	5	19	21	0	1	2007	9	9	9	1	1						
2007	5	20	9	1	1	2007	9	14	21	0	1						
2007	5	25	21	0	1	2007	9	15	9	1	1						
2007	5	26	9	1	1	2007	9	15	21	0	1						
2007	5	26	21	0	1	2007	9	16	9	1	1						
2007	5	27	9	1	1	2007	9	22	0	0	1						

Pattern 5

Year	Month	Day of Month	Hour	Capacity Multiplier	VOM Multiplier
2007	1	1	0	1	1
2007	2	1	0	1	1
2007	3	1	0	1	1
2007	4	1	0	1	1
2007	5	1	0	1	1
2007	6	1	0	1	1
2007	7	1	0	1	1
2007	8	1	0	1	1
2007	9	1	0	1	1
2007	10	1	0	0.5	1
2007	10	11	0	1	1
2007	11	1	0	1	1
2007	12	1	0	1	1

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Pattern 6

Year	Month	Day of Week Monday = 1	Hour	Capacity Multiplier	VOM Multiplier	Year	Month	Day of Week Monday = 1	Hour	Capacity Multiplier	VOM Multiplier	Year	Month	Day of Week Monday = 1	Hour	Capacity Multiplier	VOM Multiplier
2007	1	1	0	0	1	2007	1	24	0	0	1	2007	2	16	0	0	1
2007	1	1	11	1	1	2007	1	24	11	1	1	2007	2	16	11	1	1
2007	1	1	14	0	1	2007	1	24	14	0	1	2007	2	16	14	0	1
2007	1	2	0	0	1	2007	1	25	0	0	1	2007	2	17	0	0	1
2007	1	2	11	1	1	2007	1	25	11	1	1	2007	2	17	11	0	1
2007	1	2	14	0	1	2007	1	25	14	0	1	2007	2	17	14	0	1
2007	1	3	0	0	1	2007	1	26	0	0	1	2007	2	18	0	0	1
2007	1	3	11	1	1	2007	1	26	11	1	1	2007	2	18	11	0	1
2007	1	3	14	0	1	2007	1	26	14	0	1	2007	2	18	14	0	1
2007	1	4	0	0	1	2007	1	27	0	0	1	2007	2	19	0	0	1
2007	1	4	11	1	1	2007	1	27	11	0	1	2007	2	19	11	1	1
2007	1	4	14	0	1	2007	1	27	14	0	1	2007	2	19	14	0	1
2007	1	5	0	0	1	2007	1	28	0	0	1	2007	2	20	0	0	1
2007	1	5	11	1	1	2007	1	28	11	0	1	2007	2	20	11	1	1
2007	1	5	14	0	1	2007	1	28	14	0	1	2007	2	20	14	0	1
2007	1	6	0	0	1	2007	1	29	0	0	1	2007	2	21	0	0	1
2007	1	6	11	0	1	2007	1	29	11	1	1	2007	2	21	11	1	1
2007	1	6	14	0	1	2007	1	29	14	0	1	2007	2	21	14	0	1
2007	1	7	0	0	1	2007	1	30	0	0	1	2007	2	22	0	0	1
2007	1	7	11	0	1	2007	1	30	11	1	1	2007	2	22	11	1	1
2007	1	7	14	0	1	2007	1	30	14	0	1	2007	2	22	14	0	1
2007	1	8	0	0	1	2007	1	31	0	0	1	2007	2	23	0	0	1
2007	1	8	11	1	1	2007	1	31	11	1	1	2007	2	23	11	1	1
2007	1	8	14	0	1	2007	1	31	14	0	1	2007	2	23	14	0	1
2007	1	9	0	0	1	2007	2	1	0	0	1	2007	2	24	0	0	1
2007	1	9	11	1	1	2007	2	1	11	1	1	2007	2	24	11	0	1
2007	1	9	14	0	1	2007	2	1	14	0	1	2007	2	24	14	0	1
2007	1	10	0	0	1	2007	2	2	0	0	1	2007	2	25	0	0	1
2007	1	10	11	1	1	2007	2	2	11	1	1	2007	2	25	11	0	1
2007	1	10	14	0	1	2007	2	2	14	0	1	2007	2	25	14	0	1
2007	1	11	0	0	1	2007	2	3	0	0	1	2007	2	26	0	0	1
2007	1	11	11	1	1	2007	2	3	11	0	1	2007	2	26	11	1	1
2007	1	11	14	0	1	2007	2	3	14	0	1	2007	2	26	14	0	1
2007	1	12	0	0	1	2007	2	4	0	0	1	2007	2	27	0	0	1
2007	1	12	11	1	1	2007	2	4	11	0	1	2007	2	27	11	1	1
2007	1	12	14	0	1	2007	2	4	14	0	1	2007	2	27	14	0	1
2007	1	13	0	0	1	2007	2	5	0	0	1	2007	2	28	0	0	1
2007	1	13	11	0	1	2007	2	5	11	1	1	2007	2	28	11	1	1
2007	1	13	14	0	1	2007	2	5	14	0	1	2007	2	28	14	0	1
2007	1	14	0	0	1	2007	2	6	0	0	1	2007	3	1	0	0	1
2007	1	14	11	0	1	2007	2	6	11	1	1	2007	3	1	11	1	1
2007	1	14	14	0	1	2007	2	6	14	0	1	2007	3	1	14	0	1
2007	1	15	0	0	1	2007	2	7	0	0	1	2007	3	2	0	0	1
2007	1	15	11	1	1	2007	2	7	11	1	1	2007	3	2	11	1	1
2007	1	15	14	0	1	2007	2	7	14	0	1	2007	3	2	14	0	1
2007	1	16	0	0	1	2007	2	8	0	0	1	2007	3	3	0	0	1
2007	1	16	11	1	1	2007	2	8	11	1	1	2007	3	3	11	0	1
2007	1	16	14	0	1	2007	2	8	14	0	1	2007	3	3	14	0	1
2007	1	17	0	0	1	2007	2	9	0	0	1	2007	3	4	0	0	1
2007	1	17	11	1	1	2007	2	9	11	1	1	2007	3	4	11	0	1
2007	1	17	14	0	1	2007	2	9	14	0	1	2007	3	4	14	0	1
2007	1	18	0	0	1	2007	2	10	0	0	1	2007	3	5	0	0	1
2007	1	18	11	1	1	2007	2	10	11	0	1	2007	3	5	11	1	1
2007	1	18	14	0	1	2007	2	10	14	0	1	2007	3	5	14	0	1
2007	1	19	0	0	1	2007	2	11	0	0	1	2007	3	6	0	0	1
2007	1	19	11	1	1	2007	2	11	11	0	1	2007	3	6	11	1	1
2007	1	19	14	0	1	2007	2	11	14	0	1	2007	3	6	14	0	1
2007	1	20	0	0	1	2007	2	12	0	0	1	2007	3	7	0	0	1
2007	1	20	11	0	1	2007	2	12	11	1	1	2007	3	7	11	1	1
2007	1	20	14	0	1	2007	2	12	14	0	1	2007	3	7	14	0	1
2007	1	21	0	0	1	2007	2	13	0	0	1	2007	3	8	0	0	1
2007	1	21	11	0	1	2007	2	13	11	1	1	2007	3	8	11	1	1
2007	1	21	14	0	1	2007	2	13	14	0	1	2007	3	8	14	0	1
2007	1	22	0	0	1	2007	2	14	0	0	1	2007	3	9	0	0	1
2007	1	22	11	1	1	2007	2	14	11	1	1	2007	3	9	11	1	1
2007	1	22	14	0	1	2007	2	14	14	0	1	2007	3	9	14	0	1
2007	1	23	0	0	1	2007	2	15	0	0	1	2007	3	10	0	0	1
2007	1	23	11	1	1	2007	2	15	11	1	1	2007	3	10	11	0	1
2007	1	23	14	0	1	2007	2	15	14	0	1	2007	3	10	14	0	1

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Pattern 6 (continued)

Year	Month	Day of Week Monday = 1	Hour	Capacity Multiplier	VOM Multiplier	Year	Month	Day of Week Monday = 1	Hour	Capacity Multiplier	VOM Multiplier	Year	Month	Day of Week Monday = 1	Hour	Capacity Multiplier	VOM Multiplier
2007	3	11	0	0	1	2007	4	3	14	0	1	2007	4	27	11	1	1
2007	3	11	11	0	1	2007	4	4	0	0	1	2007	4	27	14	0	1
2007	3	11	14	0	1	2007	4	4	11	1	1	2007	4	28	0	0	1
2007	3	12	0	0	1	2007	4	4	14	0	1	2007	4	28	11	0	1
2007	3	12	11	1	1	2007	4	5	0	0	1	2007	4	28	14	0	1
2007	3	12	14	0	1	2007	4	5	11	1	1	2007	4	29	0	0	1
2007	3	13	0	0	1	2007	4	5	14	0	1	2007	4	29	11	0	1
2007	3	13	11	1	1	2007	4	6	0	0	1	2007	4	29	14	0	1
2007	3	13	14	0	1	2007	4	6	11	1	1	2007	4	30	0	0	1
2007	3	14	0	0	1	2007	4	6	14	0	1	2007	4	30	11	1	1
2007	3	14	11	1	1	2007	4	7	0	0	1	2007	4	30	14	0	1
2007	3	14	14	0	1	2007	4	7	11	0	1	2007	5	1	0	0	1
2007	3	15	0	0	1	2007	4	7	14	0	1	2007	5	1	11	1	1
2007	3	15	11	1	1	2007	4	8	0	0	1	2007	5	1	14	0	1
2007	3	15	14	0	1	2007	4	8	11	0	1	2007	5	2	0	0	1
2007	3	16	0	0	1	2007	4	8	14	0	1	2007	5	2	11	1	1
2007	3	16	11	1	1	2007	4	9	0	0	1	2007	5	2	14	0	1
2007	3	16	14	0	1	2007	4	9	11	1	1	2007	5	3	0	0	1
2007	3	17	0	0	1	2007	4	9	14	0	1	2007	5	3	11	1	1
2007	3	17	11	0	1	2007	4	10	0	0	1	2007	5	3	14	0	1
2007	3	17	14	0	1	2007	4	10	11	1	1	2007	5	4	0	0	1
2007	3	18	0	0	1	2007	4	10	14	0	1	2007	5	4	11	1	1
2007	3	18	11	0	1	2007	4	11	0	0	1	2007	5	4	14	0	1
2007	3	18	14	0	1	2007	4	11	11	1	1	2007	5	5	0	0	1
2007	3	19	0	0	1	2007	4	11	14	0	1	2007	5	5	11	0	1
2007	3	19	11	1	1	2007	4	12	0	0	1	2007	5	5	14	0	1
2007	3	19	14	0	1	2007	4	12	11	1	1	2007	5	6	0	0	1
2007	3	20	0	0	1	2007	4	12	14	0	1	2007	5	6	11	0	1
2007	3	20	11	1	1	2007	4	13	0	0	1	2007	5	6	14	0	1
2007	3	20	14	0	1	2007	4	13	11	1	1	2007	5	7	0	0	1
2007	3	21	0	0	1	2007	4	13	14	0	1	2007	5	7	11	1	1
2007	3	21	11	1	1	2007	4	14	0	0	1	2007	5	7	14	0	1
2007	3	21	14	0	1	2007	4	14	11	0	1	2007	5	8	0	0	1
2007	3	22	0	0	1	2007	4	14	14	0	1	2007	5	8	11	1	1
2007	3	22	11	1	1	2007	4	15	0	0	1	2007	5	8	14	0	1
2007	3	22	14	0	1	2007	4	15	11	0	1	2007	5	9	0	0	1
2007	3	23	0	0	1	2007	4	15	14	0	1	2007	5	9	11	1	1
2007	3	23	11	1	1	2007	4	16	0	0	1	2007	5	9	14	0	1
2007	3	23	14	0	1	2007	4	16	11	1	1	2007	5	10	0	0	1
2007	3	24	0	0	1	2007	4	16	14	0	1	2007	5	10	11	1	1
2007	3	24	11	0	1	2007	4	17	0	0	1	2007	5	10	14	0	1
2007	3	24	14	0	1	2007	4	17	11	1	1	2007	5	11	0	0	1
2007	3	25	0	0	1	2007	4	17	14	0	1	2007	5	11	11	1	1
2007	3	25	11	0	1	2007	4	18	0	0	1	2007	5	11	14	0	1
2007	3	25	14	0	1	2007	4	18	11	1	1	2007	5	12	0	0	1
2007	3	26	0	0	1	2007	4	18	14	0	1	2007	5	12	11	0	1
2007	3	26	11	1	1	2007	4	19	0	0	1	2007	5	12	14	0	1
2007	3	26	14	0	1	2007	4	19	11	1	1	2007	5	13	0	0	1
2007	3	27	0	0	1	2007	4	19	14	0	1	2007	5	13	11	0	1
2007	3	27	11	1	1	2007	4	20	0	0	1	2007	5	13	14	0	1
2007	3	27	14	0	1	2007	4	20	11	1	1	2007	5	14	0	0	1
2007	3	28	0	0	1	2007	4	20	14	0	1	2007	5	14	11	1	1
2007	3	28	11	1	1	2007	4	21	0	0	1	2007	5	14	14	0	1
2007	3	28	14	0	1	2007	4	21	11	0	1	2007	5	15	0	0	1
2007	3	29	0	0	1	2007	4	21	14	0	1	2007	5	15	11	1	1
2007	3	29	11	1	1	2007	4	22	0	0	1	2007	5	15	14	0	1
2007	3	29	14	0	1	2007	4	22	11	0	1	2007	5	16	0	0	1
2007	3	30	0	0	1	2007	4	22	14	0	1	2007	5	16	11	1	1
2007	3	30	11	1	1	2007	4	23	0	0	1	2007	5	16	14	0	1
2007	3	30	14	0	1	2007	4	23	11	1	1	2007	5	17	0	0	1
2007	3	31	0	0	1	2007	4	23	14	0	1	2007	5	17	11	1	1
2007	3	31	11	0	1	2007	4	24	0	0	1	2007	5	17	14	0	1
2007	3	31	14	0	1	2007	4	24	11	1	1	2007	5	18	0	0	1
2007	4	1	0	0	1	2007	4	24	14	0	1	2007	5	18	11	1	1
2007	4	1	11	0	1	2007	4	25	0	0	1	2007	5	18	14	0	1
2007	4	1	14	0	1	2007	4	25	11	1	1	2007	5	19	0	0	1
2007	4	2	0	0	1	2007	4	25	14	0	1	2007	5	19	11	0	1
2007	4	2	11	1	1	2007	4	26	0	0	1	2007	5	19	14	0	1
2007	4	2	14	0	1	2007	4	26	11	1	1	2007	5	20	0	0	1
2007	4	3	0	0	1	2007	4	26	14	0	1	2007	5	20	11	0	1
2007	4	3	11	1	1	2007	4	27	0	0	1	2007	5	20	14	0	1

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Pattern 6 (continued)

Year	Month	Day of Week Monday = 1	Hour	Capacity Multiplier	VOM Multiplier	Year	Month	Day of Week Monday = 1	Hour	Capacity Multiplier	VOM Multiplier	Year	Month	Day of Week Monday = 1	Hour	Capacity Multiplier	VOM Multiplier
2007	5	21	0	0	1	2007	6	13	14	0	1	2007	7	7	11	0	1
2007	5	21	11	1	1	2007	6	14	0	0	1	2007	7	7	14	0	1
2007	5	21	14	0	1	2007	6	14	11	1	1	2007	7	8	0	0	1
2007	5	22	0	0	1	2007	6	14	14	0	1	2007	7	8	11	0	1
2007	5	22	11	1	1	2007	6	15	0	0	1	2007	7	8	14	0	1
2007	5	22	14	0	1	2007	6	15	11	1	1	2007	7	9	0	0	1
2007	5	23	0	0	1	2007	6	15	14	0	1	2007	7	9	11	1	1
2007	5	23	11	1	1	2007	6	16	0	0	1	2007	7	9	14	0	1
2007	5	23	14	0	1	2007	6	16	11	0	1	2007	7	10	0	0	1
2007	5	24	0	0	1	2007	6	16	14	0	1	2007	7	10	11	1	1
2007	5	24	11	1	1	2007	6	17	0	0	1	2007	7	10	14	0	1
2007	5	24	14	0	1	2007	6	17	11	0	1	2007	7	11	0	0	1
2007	5	25	0	0	1	2007	6	17	14	0	1	2007	7	11	11	1	1
2007	5	25	11	1	1	2007	6	18	0	0	1	2007	7	11	14	0	1
2007	5	25	14	0	1	2007	6	18	11	1	1	2007	7	12	0	0	1
2007	5	26	0	0	1	2007	6	18	14	0	1	2007	7	12	11	1	1
2007	5	26	11	0	1	2007	6	19	0	0	1	2007	7	12	14	0	1
2007	5	26	14	0	1	2007	6	19	11	1	1	2007	7	13	0	0	1
2007	5	27	0	0	1	2007	6	19	14	0	1	2007	7	13	11	1	1
2007	5	27	11	0	1	2007	6	20	0	0	1	2007	7	13	14	0	1
2007	5	27	14	0	1	2007	6	20	11	1	1	2007	7	14	0	0	1
2007	5	28	0	0	1	2007	6	20	14	0	1	2007	7	14	11	0	1
2007	5	28	11	1	1	2007	6	21	0	0	1	2007	7	14	14	0	1
2007	5	28	14	0	1	2007	6	21	11	1	1	2007	7	15	0	0	1
2007	5	29	0	0	1	2007	6	21	14	0	1	2007	7	15	11	0	1
2007	5	29	11	1	1	2007	6	22	0	0	1	2007	7	15	14	0	1
2007	5	29	14	0	1	2007	6	22	11	1	1	2007	7	16	0	0	1
2007	5	30	0	0	1	2007	6	22	14	0	1	2007	7	16	11	1	1
2007	5	30	11	1	1	2007	6	23	0	0	1	2007	7	16	14	0	1
2007	5	30	14	0	1	2007	6	23	11	0	1	2007	7	17	0	0	1
2007	5	31	0	0	1	2007	6	23	14	0	1	2007	7	17	11	1	1
2007	5	31	11	1	1	2007	6	24	0	0	1	2007	7	17	14	0	1
2007	5	31	14	0	1	2007	6	24	11	0	1	2007	7	18	0	0	1
2007	6	1	0	0	1	2007	6	24	14	0	1	2007	7	18	11	1	1
2007	6	1	11	1	1	2007	6	25	0	0	1	2007	7	18	14	0	1
2007	6	1	14	0	1	2007	6	25	11	1	1	2007	7	19	0	0	1
2007	6	2	0	0	1	2007	6	25	14	0	1	2007	7	19	11	1	1
2007	6	2	11	0	1	2007	6	26	0	0	1	2007	7	19	14	0	1
2007	6	2	14	0	1	2007	6	26	11	1	1	2007	7	20	0	0	1
2007	6	3	0	0	1	2007	6	26	14	0	1	2007	7	20	11	1	1
2007	6	3	11	0	1	2007	6	27	0	0	1	2007	7	20	14	0	1
2007	6	3	14	0	1	2007	6	27	11	1	1	2007	7	21	0	0	1
2007	6	4	0	0	1	2007	6	27	14	0	1	2007	7	21	11	0	1
2007	6	4	11	1	1	2007	6	28	0	0	1	2007	7	21	14	0	1
2007	6	4	14	0	1	2007	6	28	11	1	1	2007	7	22	0	0	1
2007	6	5	0	0	1	2007	6	28	14	0	1	2007	7	22	11	0	1
2007	6	5	11	1	1	2007	6	29	0	0	1	2007	7	22	14	0	1
2007	6	5	14	0	1	2007	6	29	11	1	1	2007	7	23	0	0	1
2007	6	6	0	0	1	2007	6	29	14	0	1	2007	7	23	11	1	1
2007	6	6	11	1	1	2007	6	30	0	0	1	2007	7	23	14	0	1
2007	6	6	14	0	1	2007	6	30	11	0	1	2007	7	24	0	0	1
2007	6	7	0	0	1	2007	6	30	14	0	1	2007	7	24	11	1	1
2007	6	7	11	1	1	2007	7	1	0	0	1	2007	7	24	14	0	1
2007	6	7	14	0	1	2007	7	1	11	0	1	2007	7	25	0	0	1
2007	6	8	0	0	1	2007	7	1	14	0	1	2007	7	25	11	1	1
2007	6	8	11	1	1	2007	7	2	0	0	1	2007	7	25	14	0	1
2007	6	8	14	0	1	2007	7	2	11	1	1	2007	7	26	0	0	1
2007	6	9	0	0	1	2007	7	2	14	0	1	2007	7	26	11	1	1
2007	6	9	11	0	1	2007	7	3	0	0	1	2007	7	26	14	0	1
2007	6	9	14	0	1	2007	7	3	11	1	1	2007	7	27	0	0	1
2007	6	10	0	0	1	2007	7	3	14	0	1	2007	7	27	11	1	1
2007	6	10	11	0	1	2007	7	4	0	0	1	2007	7	27	14	0	1
2007	6	10	14	0	1	2007	7	4	11	1	1	2007	7	28	0	0	1
2007	6	11	0	0	1	2007	7	4	14	0	1	2007	7	28	11	0	1
2007	6	11	11	1	1	2007	7	5	0	0	1	2007	7	28	14	0	1
2007	6	11	14	0	1	2007	7	5	11	1	1	2007	7	29	0	0	1
2007	6	12	0	0	1	2007	7	5	14	0	1	2007	7	29	11	0	1
2007	6	12	11	1	1	2007	7	6	0	0	1	2007	7	29	14	0	1
2007	6	12	14	0	1	2007	7	6	11	1	1	2007	7	30	0	0	1
2007	6	13	0	0	1	2007	7	6	14	0	1	2007	7	30	11	1	1
2007	6	13	11	1	1	2007	7	7	0	0	1	2007	7	30	14	0	1

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Pattern 6 (continued)

Year	Month	Day of Week Monday = 1	Hour	Capacity Multiplier	VOM Multiplier	Year	Month	Day of Week Monday = 1	Hour	Capacity Multiplier	VOM Multiplier	Year	Month	Day of Week Monday = 1	Hour	Capacity Multiplier	VOM Multiplier
2007	7	31	0	0	1	2007	8	23	14	0	1	2007	9	16	11	0	1
2007	7	31	11	1	1	2007	8	24	0	0	1	2007	9	16	14	0	1
2007	7	31	14	0	1	2007	8	24	11	1	1	2007	9	17	0	0	1
2007	8	1	0	0	1	2007	8	24	14	0	1	2007	9	17	11	1	1
2007	8	1	11	1	1	2007	8	25	0	0	1	2007	9	17	14	0	1
2007	8	1	14	0	1	2007	8	25	11	0	1	2007	9	18	0	0	1
2007	8	2	0	0	1	2007	8	25	14	0	1	2007	9	18	11	1	1
2007	8	2	11	1	1	2007	8	26	0	0	1	2007	9	18	14	0	1
2007	8	2	14	0	1	2007	8	26	11	0	1	2007	9	19	0	0	1
2007	8	3	0	0	1	2007	8	26	14	0	1	2007	9	19	11	1	1
2007	8	3	11	1	1	2007	8	27	0	0	1	2007	9	19	14	0	1
2007	8	3	14	0	1	2007	8	27	11	1	1	2007	9	20	0	0	1
2007	8	4	0	0	1	2007	8	27	14	0	1	2007	9	20	11	1	1
2007	8	4	11	0	1	2007	8	28	0	0	1	2007	9	20	14	0	1
2007	8	4	14	0	1	2007	8	28	11	1	1	2007	9	21	0	0	1
2007	8	5	0	0	1	2007	8	28	14	0	1	2007	9	21	11	1	1
2007	8	5	11	0	1	2007	8	29	0	0	1	2007	9	21	14	0	1
2007	8	5	14	0	1	2007	8	29	11	1	1	2007	9	22	0	0	1
2007	8	6	0	0	1	2007	8	29	14	0	1	2007	9	22	11	0	1
2007	8	6	11	1	1	2007	8	30	0	0	1	2007	9	22	14	0	1
2007	8	6	14	0	1	2007	8	30	11	1	1	2007	9	23	0	0	1
2007	8	7	0	0	1	2007	8	30	14	0	1	2007	9	23	11	0	1
2007	8	7	11	1	1	2007	8	31	0	0	1	2007	9	23	14	0	1
2007	8	7	14	0	1	2007	8	31	11	1	1	2007	9	24	0	0	1
2007	8	8	0	0	1	2007	8	31	14	0	1	2007	9	24	11	1	1
2007	8	8	11	1	1	2007	9	1	0	0	1	2007	9	24	14	0	1
2007	8	8	14	0	1	2007	9	1	11	0	1	2007	9	25	0	0	1
2007	8	9	0	0	1	2007	9	1	14	0	1	2007	9	25	11	1	1
2007	8	9	11	1	1	2007	9	2	0	0	1	2007	9	25	14	0	1
2007	8	9	14	0	1	2007	9	2	11	0	1	2007	9	26	0	0	1
2007	8	10	0	0	1	2007	9	2	14	0	1	2007	9	26	11	1	1
2007	8	10	11	1	1	2007	9	3	0	0	1	2007	9	26	14	0	1
2007	8	10	14	0	1	2007	9	3	11	1	1	2007	9	27	0	0	1
2007	8	11	0	0	1	2007	9	3	14	0	1	2007	9	27	11	1	1
2007	8	11	11	0	1	2007	9	4	0	0	1	2007	9	27	14	0	1
2007	8	11	14	0	1	2007	9	4	11	1	1	2007	9	28	0	0	1
2007	8	12	0	0	1	2007	9	4	14	0	1	2007	9	28	11	1	1
2007	8	12	11	0	1	2007	9	5	0	0	1	2007	9	28	14	0	1
2007	8	12	14	0	1	2007	9	5	11	1	1	2007	9	29	0	0	1
2007	8	13	0	0	1	2007	9	5	14	0	1	2007	9	29	11	0	1
2007	8	13	11	1	1	2007	9	6	0	0	1	2007	9	29	14	0	1
2007	8	13	14	0	1	2007	9	6	11	1	1	2007	9	30	0	0	1
2007	8	14	0	0	1	2007	9	6	14	0	1	2007	9	30	11	0	1
2007	8	14	11	1	1	2007	9	7	0	0	1	2007	9	30	14	0	1
2007	8	14	14	0	1	2007	9	7	11	1	1	2007	10	1	0	0	1
2007	8	15	0	0	1	2007	9	7	14	0	1	2007	10	1	11	1	1
2007	8	15	11	1	1	2007	9	8	0	0	1	2007	10	1	14	0	1
2007	8	15	14	0	1	2007	9	8	11	0	1	2007	10	2	0	0	1
2007	8	16	0	0	1	2007	9	8	14	0	1	2007	10	2	11	1	1
2007	8	16	11	1	1	2007	9	9	0	0	1	2007	10	2	14	0	1
2007	8	16	14	0	1	2007	9	9	11	0	1	2007	10	3	0	0	1
2007	8	17	0	0	1	2007	9	9	14	0	1	2007	10	3	11	1	1
2007	8	17	11	1	1	2007	9	10	0	0	1	2007	10	3	14	0	1
2007	8	17	14	0	1	2007	9	10	11	1	1	2007	10	4	0	0	1
2007	8	18	0	0	1	2007	9	10	14	0	1	2007	10	4	11	1	1
2007	8	18	11	0	1	2007	9	11	0	0	1	2007	10	4	14	0	1
2007	8	18	14	0	1	2007	9	11	11	1	1	2007	10	5	0	0	1
2007	8	19	0	0	1	2007	9	11	14	0	1	2007	10	5	11	1	1
2007	8	19	11	0	1	2007	9	12	0	0	1	2007	10	5	14	0	1
2007	8	19	14	0	1	2007	9	12	11	1	1	2007	10	6	0	0	1
2007	8	20	0	0	1	2007	9	12	14	0	1	2007	10	6	11	0	1
2007	8	20	11	1	1	2007	9	13	0	0	1	2007	10	6	14	0	1
2007	8	20	14	0	1	2007	9	13	11	1	1	2007	10	7	0	0	1
2007	8	21	0	0	1	2007	9	13	14	0	1	2007	10	7	11	0	1
2007	8	21	11	1	1	2007	9	14	0	0	1	2007	10	7	14	0	1
2007	8	21	14	0	1	2007	9	14	11	1	1	2007	10	8	0	0	1
2007	8	22	0	0	1	2007	9	14	14	0	1	2007	10	8	11	1	1
2007	8	22	11	1	1	2007	9	15	0	0	1	2007	10	8	14	0	1
2007	8	22	14	0	1	2007	9	15	11	0	1	2007	10	9	0	0	1
2007	8	23	0	0	1	2007	9	15	14	0	1	2007	10	9	11	1	1
2007	8	23	11	1	1	2007	9	16	0	0	1	2007	10	9	14	0	1

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Pattern 6 (continued)

Year	Month	Day of Week Monday = 1	Hour	Capacity Multiplier	VOM Multiplier	Year	Month	Day of Week Monday = 1	Hour	Capacity Multiplier	VOM Multiplier	Year	Month	Day of Week Monday = 1	Hour	Capacity Multiplier	VOM Multiplier
2007	10	10	0	0	1	2007	11	2	14	0	1	2007	11	26	11	1	1
2007	10	10	11	1	1	2007	11	3	0	0	1	2007	11	26	14	0	1
2007	10	10	14	0	1	2007	11	3	11	0	1	2007	11	27	0	0	1
2007	10	11	0	0	1	2007	11	3	14	0	1	2007	11	27	11	1	1
2007	10	11	11	1	1	2007	11	4	0	0	1	2007	11	27	14	0	1
2007	10	11	14	0	1	2007	11	4	11	0	1	2007	11	28	0	0	1
2007	10	12	0	0	1	2007	11	4	14	0	1	2007	11	28	11	1	1
2007	10	12	11	1	1	2007	11	5	0	0	1	2007	11	28	14	0	1
2007	10	12	14	0	1	2007	11	5	11	1	1	2007	11	29	0	0	1
2007	10	13	0	0	1	2007	11	5	14	0	1	2007	11	29	11	1	1
2007	10	13	11	0	1	2007	11	6	0	0	1	2007	11	29	14	0	1
2007	10	13	14	0	1	2007	11	6	11	1	1	2007	11	30	0	0	1
2007	10	14	0	0	1	2007	11	6	14	0	1	2007	11	30	11	1	1
2007	10	14	11	0	1	2007	11	7	0	0	1	2007	11	30	14	0	1
2007	10	14	14	0	1	2007	11	7	11	1	1	2007	12	1	0	0	1
2007	10	15	0	0	1	2007	11	7	14	0	1	2007	12	1	11	0	1
2007	10	15	11	1	1	2007	11	8	0	0	1	2007	12	1	14	0	1
2007	10	15	14	0	1	2007	11	8	11	1	1	2007	12	2	0	0	1
2007	10	16	0	0	1	2007	11	8	14	0	1	2007	12	2	11	0	1
2007	10	16	11	1	1	2007	11	9	0	0	1	2007	12	2	14	0	1
2007	10	16	14	0	1	2007	11	9	11	1	1	2007	12	3	0	0	1
2007	10	17	0	0	1	2007	11	9	14	0	1	2007	12	3	11	1	1
2007	10	17	11	1	1	2007	11	10	0	0	1	2007	12	3	14	0	1
2007	10	17	14	0	1	2007	11	10	11	0	1	2007	12	4	0	0	1
2007	10	18	0	0	1	2007	11	10	14	0	1	2007	12	4	11	1	1
2007	10	18	11	1	1	2007	11	11	0	0	1	2007	12	4	14	0	1
2007	10	18	14	0	1	2007	11	11	11	0	1	2007	12	5	0	0	1
2007	10	19	0	0	1	2007	11	11	14	0	1	2007	12	5	11	1	1
2007	10	19	11	1	1	2007	11	12	0	0	1	2007	12	5	14	0	1
2007	10	19	14	0	1	2007	11	12	11	1	1	2007	12	6	0	0	1
2007	10	20	0	0	1	2007	11	12	14	0	1	2007	12	6	11	1	1
2007	10	20	11	0	1	2007	11	13	0	0	1	2007	12	6	14	0	1
2007	10	20	14	0	1	2007	11	13	11	1	1	2007	12	7	0	0	1
2007	10	21	0	0	1	2007	11	13	14	0	1	2007	12	7	11	1	1
2007	10	21	11	0	1	2007	11	14	0	0	1	2007	12	7	14	0	1
2007	10	21	14	0	1	2007	11	14	11	1	1	2007	12	8	0	0	1
2007	10	22	0	0	1	2007	11	14	14	0	1	2007	12	8	11	0	1
2007	10	22	11	1	1	2007	11	15	0	0	1	2007	12	8	14	0	1
2007	10	22	14	0	1	2007	11	15	11	1	1	2007	12	9	0	0	1
2007	10	23	0	0	1	2007	11	15	14	0	1	2007	12	9	11	0	1
2007	10	23	11	1	1	2007	11	16	0	0	1	2007	12	9	14	0	1
2007	10	23	14	0	1	2007	11	16	11	1	1	2007	12	10	0	0	1
2007	10	24	0	0	1	2007	11	16	14	0	1	2007	12	10	11	1	1
2007	10	24	11	1	1	2007	11	17	0	0	1	2007	12	10	14	0	1
2007	10	24	14	0	1	2007	11	17	11	0	1	2007	12	11	0	0	1
2007	10	25	0	0	1	2007	11	17	14	0	1	2007	12	11	11	1	1
2007	10	25	11	1	1	2007	11	18	0	0	1	2007	12	11	14	0	1
2007	10	25	14	0	1	2007	11	18	11	0	1	2007	12	12	0	0	1
2007	10	26	0	0	1	2007	11	18	14	0	1	2007	12	12	11	1	1
2007	10	26	11	1	1	2007	11	19	0	0	1	2007	12	12	14	0	1
2007	10	26	14	0	1	2007	11	19	11	1	1	2007	12	13	0	0	1
2007	10	27	0	0	1	2007	11	19	14	0	1	2007	12	13	11	1	1
2007	10	27	11	0	1	2007	11	20	0	0	1	2007	12	13	14	0	1
2007	10	27	14	0	1	2007	11	20	11	1	1	2007	12	14	0	0	1
2007	10	28	0	0	1	2007	11	20	14	0	1	2007	12	14	11	1	1
2007	10	28	11	0	1	2007	11	21	0	0	1	2007	12	14	14	0	1
2007	10	28	14	0	1	2007	11	21	11	1	1	2007	12	15	0	0	1
2007	10	29	0	0	1	2007	11	21	14	0	1	2007	12	15	11	0	1
2007	10	29	11	1	1	2007	11	22	0	0	1	2007	12	15	14	0	1
2007	10	29	14	0	1	2007	11	22	11	1	1	2007	12	16	0	0	1
2007	10	30	0	0	1	2007	11	22	14	0	1	2007	12	16	11	0	1
2007	10	30	11	1	1	2007	11	23	0	0	1	2007	12	16	14	0	1
2007	10	30	14	0	1	2007	11	23	11	1	1	2007	12	17	0	0	1
2007	10	31	0	0	1	2007	11	23	14	0	1	2007	12	17	11	1	1
2007	10	31	11	1	1	2007	11	24	0	0	1	2007	12	17	14	0	1
2007	10	31	14	0	1	2007	11	24	11	0	1	2007	12	18	0	0	1
2007	11	1	0	0	1	2007	11	24	14	0	1	2007	12	18	11	1	1
2007	11	1	11	1	1	2007	11	25	0	0	1	2007	12	18	14	0	1
2007	11	1	14	0	1	2007	11	25	11	0	1	2007	12	19	0	0	1
2007	11	2	0	0	1	2007	11	25	14	0	1	2007	12	19	11	1	1
2007	11	2	11	1	1	2007	11	26	0	0	1	2007	12	19	14	0	1

Pattern 6 (continued)

Year	Month	Day of Week Monday = 1	Hour	Capacity Multiplier	VOM Multiplier
2007	12	20	0	0	1
2007	12	20	11	1	1
2007	12	20	14	0	1
2007	12	21	0	0	1
2007	12	21	11	1	1
2007	12	21	14	0	1
2007	12	22	0	0	1
2007	12	22	11	0	1
2007	12	22	14	0	1
2007	12	23	0	0	1
2007	12	23	11	0	1
2007	12	23	14	0	1
2007	12	24	0	0	1
2007	12	24	11	1	1
2007	12	24	14	0	1
2007	12	25	0	0	1
2007	12	25	11	1	1
2007	12	25	14	0	1
2007	12	26	0	0	1
2007	12	26	11	1	1
2007	12	26	14	0	1
2007	12	27	0	0	1
2007	12	27	11	1	1
2007	12	27	14	0	1
2007	12	28	0	0	1
2007	12	28	11	1	1
2007	12	28	14	0	1
2007	12	29	0	0	1
2007	12	29	11	0	1
2007	12	29	14	0	1
2007	12	30	0	0	1
2007	12	30	11	0	1
2007	12	30	14	0	1
2007	12	31	0	0	1
2007	12	31	11	1	1
2007	12	31	14	0	1

Kalaiea 2007 Rate Case Forecasted Expenses 9/28/2006 Production Simulation Update

Assumptions:

40 2003 Base Additive GNPPD	106.981	116.138	1.019702227	May
40 2006 Current Additive GNPPD				
Base LSFQ Fuel Price	\$18.5000			
40 2006 GNPPD	116.138			
Base GNPPD	73.944			
Capacity Cost per kW-mo., over 180 MW up to 208 MW	\$0.33			
Capacity Cost per kW-mo., up to 180 MW	\$13.70			
Capacity Cost per kW-mo., above minimum purch	\$0.0086			
O&M (Non-fuel) Base per kWh, up to minimum purch	\$0.0048			
O&M (Non-fuel) Base per kWh, above minimum purch	\$0.00144			
Base Fuel Additive per kWh	\$0.00144			
Shortfall Energy per kWh	\$0.0008			
Variable O&M credit applied to				

		One CT		Two CTs		EAF Calculation				TOTAL FACILITY				Total Shortfall		Total Expense	
		net MWh		Op Hrs		Avg MW	Monthly EAF	YTD EAF	Energy MWh	Fuel Only No additive	Additive Only	Total Fuel	(Non-fuel) O&M Independent of Minimum Purch	Credit	Capacity Up to 180 MW	Capacity Over 180 MW	Total Expense
Jan	90.153	177	100.873	197.793	92.15%	125.930	125.930	39.381	\$4,381.080	\$200.739	\$12,539.356	\$1,898.788	\$593.484	\$2,465.250	\$2,465.250	\$17,161.707	\$201,145.297
Feb	90.071	437	0	0.000	62.47%	128.007	128.007	128.007	\$12,324.341	\$200.862	\$12,525.203	\$1,899.920	\$2,465.250	\$2,465.250	\$17,336.086	\$17,336.086	\$201,145.297
Mar	98.738	103	110.101	196.437	73.24%	130.003	130.003	130.003	\$13,180.518	\$200.862	\$13,407.314	\$1,907.178	\$2,465.250	\$2,465.250	\$17,406.800	\$17,406.800	\$201,145.297
Apr	98.386	103	127.463	202.045	85.44%	130.003	130.003	130.003	\$13,284.495	\$200.862	\$13,502.860	\$2,006.781	\$2,465.250	\$2,465.250	\$17,579.338	\$17,579.338	\$201,145.297
May	98.578	103	127.463	202.045	85.44%	130.003	130.003	130.003	\$13,284.495	\$200.862	\$13,502.860	\$2,006.781	\$2,465.250	\$2,465.250	\$17,579.338	\$17,579.338	\$201,145.297
Jun	98.578	103	127.463	202.045	85.44%	130.003	130.003	130.003	\$13,284.495	\$200.862	\$13,502.860	\$2,006.781	\$2,465.250	\$2,465.250	\$17,579.338	\$17,579.338	\$201,145.297
Jul	98.578	103	127.463	202.045	85.44%	130.003	130.003	130.003	\$13,284.495	\$200.862	\$13,502.860	\$2,006.781	\$2,465.250	\$2,465.250	\$17,579.338	\$17,579.338	\$201,145.297
Aug	98.578	103	127.463	202.045	85.44%	130.003	130.003	130.003	\$13,284.495	\$200.862	\$13,502.860	\$2,006.781	\$2,465.250	\$2,465.250	\$17,579.338	\$17,579.338	\$201,145.297
Sep	98.578	103	127.463	202.045	85.44%	130.003	130.003	130.003	\$13,284.495	\$200.862	\$13,502.860	\$2,006.781	\$2,465.250	\$2,465.250	\$17,579.338	\$17,579.338	\$201,145.297
Oct	98.578	103	127.463	202.045	85.44%	130.003	130.003	130.003	\$13,284.495	\$200.862	\$13,502.860	\$2,006.781	\$2,465.250	\$2,465.250	\$17,579.338	\$17,579.338	\$201,145.297
Nov	98.578	103	127.463	202.045	85.44%	130.003	130.003	130.003	\$13,284.495	\$200.862	\$13,502.860	\$2,006.781	\$2,465.250	\$2,465.250	\$17,579.338	\$17,579.338	\$201,145.297
Dec	98.578	103	127.463	202.045	85.44%	130.003	130.003	130.003	\$13,284.495	\$200.862	\$13,502.860	\$2,006.781	\$2,465.250	\$2,465.250	\$17,579.338	\$17,579.338	\$201,145.297
Total	153.717	1,708	1,335.727	199.571	92.00%	1,489,444	1,489,444	\$145,372.206	\$2,374.257	\$2,374.257	\$147,746.483	\$22,457.790	\$1,777.949	\$3,136.000	\$3,136.000	\$201,145.297	\$201,145.297
A SOURCES AND NOTES:																	
Error in the table and across the top of the page for the column address																	

DATA SOURCES AND NOTES:

Refer to the letter grid across the top of the pages for the column address and the line number on the left side for the row number. General reference to a column without reference to a row means to use the data for the corresponding month. Otherwise a specific row reference is in () next to the column designation. Calculation on one sheet of the spreadsheet may draw on data from another sheet. Elements of a formula that reference data from another sheet are preceded by an "A," if the data are from the SUMMARY sheet and preceded by a "B," if the data are from the BACKUP sheet.

4Q Base Additive GNPPD in cell R(5) is the value on 11/1/2004 per the Kalaiea PPA Amendment, page 4. This value is the 4th quarter 2003 GNPPD as updated per Bureau of Economic Analysis publication as of March 31 2006.

4Q 2006 Current Additive GNPPD in cell R(9) is from the Kalaiea PPA Amendment 5, pg 4 is the same values as in Note 3. Base Fuel Additive per kWh in cell N(11) is based on Kalaiea PPA, p50. Shortfall Energy Cost per kWh in cell N(11) is based on Kalaiea PPA, p51. The net MWh and Op Hours in cells C and D, respectively, and cells F and G, respectively, are from the HECC 2007 Operational/Budget Production Simulation dated 9/28/06.

The Avg MW in cell E is calculated from C / D. The Avg MW in cell H is calculated from F / G. The monthly EAF in cell I is calculated from (B-C * 24) - B-D - B-E / (B-C * 24). The YTD EAF in cell J is calculated as follows. The first month is from L. Subsequent months are calculated from J (from previous month) * (sum B-C(existing and previous months) * 24) + (I - B-C * 24) / (sum B-C(existing and previous months) * 24).

The Energy MWh in cell K is calculated from B-H + B-M. The Fuel Only No Additive cost in cell L is calculated from B-H + B-M. The Additive Only cost in cell M is calculated from B-I + B-N. The Total Fuel cost in cell N is calculated from L + M.

The O&M (Non-fuel) cost in cell O is calculated from J(10) * 1000 * K - (E10 / E9) * 1000 * J(12) - (B-R(92) * J(13)). The variable O&M credit is Col F calculated from (E10 / E9) * 1000 * J(12) - (B-R(92) * J(13)). The credit is input as a negative sign relative to expenses elsewhere in the month of May, to reflect reconciliation at the end of the Contract Year.

Col Q is empty. The Capacity cost, up to 180 MW, in col R is calculated from J(8) * 180,000. The Capacity cost, over 180 MW, in col S is calculated from J(9) * 28,000. The Total Expense cost in col T is the sum of columns N + O + P + R + S. Col Q is empty.

The Total Shortfall Cost in cell T(39) is from B-N(48).

in cell J(13) is from Kalaiea PPA amendment No.5, p 10.

10. O&M Base per kWh, above the minimum purchase amount, for loads >= 180 MW, is from proposed Kalaiea PPA amendment No.5, p 10.

9. O&M Base per kWh, above the minimum purchase amount, for loads < 180 MW, in cell J(12) is from proposed Kalaiea PPA amendment 2, p2.

8. O&M Base per kWh, up to the minimum purchase amount, in cell J(10) is from the Kalaiea PPA Amendment No.5.

7. Capacity Cost per kW-mo., over 180 MW, up to 208 MW, in cell J(9) is from the Kalaiea PPA Amendment 2, p5.

6. Capacity Cost per kW-mo., up to 180 MW, in cell J(8) is based on calculations per 2007 LSFQ Fuel Price in cell E(12) is from C. Shogata's 9/29/2006 e-mail.

5. Base LSFQ Fuel Price in cell E(11) is from the Kalaiea PPA, p49. (http://www.eia.doe.gov/coal/coal/pdfs/papa.pdf; visited site on 2/16/2006).

4. Base LSFQ Fuel Price in cell E(11) is from the Kalaiea PPA, p49. (http://www.eia.doe.gov/coal/coal/pdfs/papa.pdf; visited site on 2/16/2006).

3. 4Q 2006 GNPPD in cell E(10) is based on the GDP Chain-type Price Index Value is constant with the June 30, 2003 letter agreement with KLP.

2. Base GNPPD in cell E(9) is from the GNPPD value on 11/85 per the performance and forecasted performance.

1. Forced Outage Rate in cell E(8) is based on the approximate actual

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W
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Kalaeloa 2007 Rate Case Forecasted Expenses 9/28/2006 Production Simulation Update

Assumptions:

See SUMMARY sheet

Worksheet Modified: 11-Aug-06
Latest Data Input: 16-Dec-06
Print: 16-Dec-06

AVAILABILITY DATA					ONE CT ENERGY				TWO CT ENERGY				
Calendar Days	Planned Maintenance Ehrs Out	Forced Outage Ehrs Out	Base Fuel Comp. cents/kWh	Total Energy cents/kWh	Fuel Only No additive	Additive Only	Total fuel	Base Fuel Comp. cents/kWh	Total Energy cents/kWh	Fuel Only No additive	Additive Only	Total Fuel	
Jan	31	48.00	10.44	3.210233	11,287,719	\$1,775,745	\$25,436	\$1,801,181	2.770000	9.781646	\$10,559,872	\$175,303	\$10,735,175
Feb	28	470.00	3.03	3.210952	11,286,865	\$4,381,090	\$62,744	\$4,443,834	0.000000	0.159008	\$0	\$0	\$0
Mar	31	36.00	10.62	3.213442	11,288,644	\$1,629,368	\$23,316	\$1,652,682	2.770000	9.781646	\$10,664,975	\$177,548	\$10,842,521
Apr	30	0.00	10.80	3.208815	11,282,110	\$1,035,301	\$14,837	\$1,050,138	2.770000	9.781646	\$11,438,384	\$189,854	\$11,628,238
May	31	0.00	11.16	3.214887	11,283,160	\$848,334	\$15,585	\$863,919	2.770000	9.781646	\$12,242,184	\$203,231	\$12,445,415
Jun	30	0.00	10.80	3.209311	11,284,524	\$1,094,712	\$15,688	\$1,110,400	2.770000	9.781646	\$12,242,184	\$192,266	\$12,434,450
Jul	31	0.00	11.16	3.208815	11,282,110	\$1,035,301	\$14,837	\$1,050,139	2.770000	9.781646	\$12,242,184	\$203,347	\$12,445,531
Aug	31	0.00	11.16	3.214887	11,283,160	\$848,334	\$15,585	\$863,919	2.770000	9.781646	\$12,354,270	\$188,866	\$12,543,136
Sep	30	24.00	10.44	3.209940	11,286,705	\$1,154,124	\$16,534	\$1,170,657	2.770000	9.781646	\$12,354,270	\$188,866	\$12,543,136
Oct	31	0.00	11.16	3.214887	11,283,160	\$848,334	\$15,585	\$863,919	2.770000	9.781646	\$12,354,270	\$188,866	\$12,543,136
Nov	30	0.00	10.80	3.214810	11,283,933	\$878,044	\$15,989	\$894,033	2.770000	9.781646	\$11,672,772	\$193,778	\$11,866,550
Dec	31	0.00	11.16	3.209940	11,286,705	\$1,154,124	\$16,534	\$1,170,657	2.770000	9.781646	\$11,687,855	\$194,025	\$11,881,880
Total	365	578	122.73			\$17,112,488	\$245,034	\$17,357,520			\$128,259,719	\$2,129,224	\$130,388,943

SHORTFALL CALCULATION			
Adjusted Min Purch.	1,336,706	GMWh	
Actual Annual Purchase	1,489,444	GMWh	
Shortfall	(152,738)	GMWh	
GM Base Shortfall Cost	\$0		
Fuel Shortfall Cost	\$0		
Total Shortfall Cost	\$0		

ABOVE MINIMUM PURCHASE			
152,738	MMWh	May 2007	
136,003	MMWh	Part of April 2007	
16,735	MMWh		
Energy (MMWh)	Energy (MMWh)		
at <= 180 MW	at >= 180 MW		
29,080	106,774		
May subtotal			
May subtotal	26,080	106,774	135,854
April 27 to 30	4359	11791	16,150
April 26 (partial day)	178	388	564
April subtotal	4,537	12,177	16,714
March	0	0	0
March x (partial day)	0	0	0
March subtotal	0	0	0
Above minimum purchase starts in the hour after the minimum purchase is exceeded such that the total may not exactly match shortfall calculation.			
Total	33,617	118,951	152,568

DATA SOURCES AND NOTES: See SUMMARY sheet and below

Refer to the letter grid across the top of the page for the column address and the line number on the left side for the row number. General reference to a column without reference to a row means to use the data for the corresponding month. Otherwise a specific row reference is in () next to the column designation. Calculation on one sheet of the spreadsheet may draw on data from another sheet. Elements of a formula that reference data from another sheet are preceded by an "A." If the data are from the SUMMARY sheet and preceded by a "B." If the data are from the BACKUP sheet.

Planned Maintenance Equivalent Hours (Ehrs) Out in col D is based in part on a template provided by the HECO planned maintenance schedule revised on 7/21/06. This template and the assumed EAF of 92.0% and EFOR of 1.5% are used to estimate the corresponding number of equivalent full plant hours outage for the respective months. The result is maintenance outage equivalent full plant hours of 48 in January, 470 in February, 36 in March and 24 in September.

The Forced Outage Equivalent Hours (Ehrs) Out in col E is calculated from A(E) * (IC * 24) / D.

The Base Fuel Component in cents per kWh in col F is calculated from the one CT operation formula in the Kalaeloa PPA, p50. The load data are from A.E.

The Total Energy in cents per kWh in col G is calculated from (F * A(E)(12) / A(E)(11)) * (A(N)(10) * 100 * A(N)(9) / A(N)(8)).

The LSF0 Actual / LSF0 Base Fuel Price (A(E)(12

Contract Year	Start	End	EAF	EFOR
1	May-91	May-92	83.81%	1.90% Note: agreement not reached with KPLP on EFOR; settlement 12/95
2	Jun-92	May-93	86.10%	12.75% Note: agreement not reached with KPLP on EFOR; settlement 12/95
3	Jun-93	May-94	80.13%	6.61% Note: agreement not reached with KPLP on EFOR; settlement 12/95
4	Jun-94	May-95	93.97%	0.82%
5	Jun-95	May-96	94.01%	1.51%
6	Jun-96	May-97	91.57%	0.87%
7	Jun-97	May-98	93.61%	0.88%
8	Jun-98	May-99	93.65%	0.69%
9	Jun-99	May-00	92.18%	0.56% 20 day full plant turbine outage
10	Jun-00	May-01	95.02%	0.44%
11	Jun-01	May-02	94.29%	0.89%
12	Jun-02	May-03	92.22%	1.10%
13	Jun-03	May-04	93.63%	1.60% (no FM.....still pending)--with FM (94.44% and 0.78%)
14	Jun-04	May-05	91.85%	1.04%
15	Jun-05	May-06	92.46%	1.47%

Note: boiler leaks that have occurred in the last several years and involve 2 to 5 days of forced outage are now projected to occur about once per year.



September 15, 2006

Thomas C. Simmons, P.E.
Vice President
Power Supply

VIA E-MAIL (royal.daniel@pseg.com) AND U.S. MAIL

Royal Daniel
Vice President
Kalaeloa Partners, L. P.
91-111 Kalaeloa Boulevard
Kapolei, Hawaii 96707

Dear Royal:

Subject: HRSG Reliability Concerns

We appreciated the opportunity to meet with the KPLP and Alstom Power teams on August 15 and gain a better understanding of the KPLP perspective on the future operational potential of the KPLP plant beyond the current PPA term, and in particular to hear more about the actions planned to address the increasing occurrence of heat recovery steam generator (HRSG) water and/or steam leaks that impact the plant's availability to the HECO system.

We need to reaffirm our serious concern about the increasing occurrence of plant downtime related to CT1 and CT2 HRSG leaks. The frequency of such leaks thus far in 2006 shows a significant increase over the historical norm and raises the question as to whether KPLP will be able to sustain continued adequate levels of reliability and availability of the plant.

The KPLP plant, with its 208MW of Firm Capacity, makes up 12% of total system capacity and is a critical generating station to the HECO system. The loss of one CT due to a HRSG leak is also significant, resulting in a loss to the HECO system of 118 MW of Firm Capacity.

The increasing occurrence of the HRSG leaks and the resulting unplanned multi-day outages of KPLP capacity and energy causes HECO to make an increasing number of adjustments in scheduling both operational and maintenance activities (such as delaying the start of scheduled outages, last minute changes to mobilizing maintenance crews including local and mainland contractors, operating units off economic dispatch, etc.) for other generating units in order to maintain sufficient available generation to meet critical operating reliability criteria. Such criteria are particularly important to island systems with no interconnection to other grids.

Based on the presentations of the HRSG issue by Alstom Power as well as numerous other individual technical discussions, we understand that there are two primary issues and some secondary issues related to the HRSG leaks and reliable operation.

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Primary issues:

- Inherent thermal stresses for certain tube-to-header connections related to the normal cycling (startup/shutdown) operations.
- External tube corrosion on tubes exposed to extensive ash buildup combined with low exhaust temperatures approaching the acid dew point in certain sections of the exhaust path.

Other Issues:

- Tube erosion caused by extensive blockage of the exhaust path.
- Weld repair failures contributing to leaks.
- Increased steam/water flows resulting from removal of steam and water piping from service by capping leaking tubes as a repair strategy.
- Flow-accelerated-corrosion (FAC) in the low pressure (LP) evaporator.
- Effect of extensive exhaust gas blockage on turbine backpressure
- Excessive tube and fin fouling coupled with compact tube spacing that prevents complete washing cycle leaving moistened ash residue that increases external metal corrosion.

Based on recent trends the external corrosion is a rapidly emerging problem with an uncertain and possibly quite significant impact on future plant availability and reliability. Currently the problem is most apparent in the LP segment of the HRSG where the lowest temperatures occur, but it is unclear to HECO and apparently also unclear to KPLP and Alstom Power as to the extent of the problem due to the heavy fouling and tight tube configuration which limits access to those areas. It is becoming more apparent that KPLP's repair strategy needs to be reconsidered to improve the plant's reliability. At this point significant replacement and redesign of tube bundles rather than just repairing or plugging tubes as they leak may be the most appropriate good engineering and operating practices (GEOPS).

On a more positive note HECO appreciates that KPLP and Alstom Power are intensifying their effort to apply engineering resources (both internal and external) and financial resources to resolve the HRSG problems and improve reliability. We believe that KPLP is on the right track to begin the process of replacing tube bundles in the low pressure section with improved material and tube designs that are more appropriate for mitigating the problems experienced with extensive fouling, acid dew point corrosion, cyclic fatigue, and other issues related to use of low sulfur fuel oil (LSFO).

KPLP's plan to replace three tube bundles in the upcoming 2007 C inspection for CT2 is a good first step toward improving reliability. We encourage the KPLP/Alstom Power team to consider pursuing a more aggressive tube bundle replacement of all sections of the HRSG in the near term to address and resolve other design-related problems. The removed tube bank sections should be inspected, disassembled, and analyzed to determine root cause failure mechanisms. As appropriate, the designs of the tube bank sections, water washing systems and operating procedures should be revised to mitigate root causes. Also as mentioned earlier, FAC in the LP evaporator should be monitored since it is a known failure mechanism.

For longer term planning, we recommend that KPLP/Alstom Power continue to take a close look at the feasibility of making plant modifications, and as necessary permit modifications, to



Royal Daniel, Vice President
Kalaeloa Partners, L.P.
September 15, 2006
Page 3

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DOCKET NO. 2006-0386
PAGE 6 OF 6

enable the CT's to be operated in simple cycle mode during times when a HRSG needs to be taken out of service and the CT is otherwise capable of running. If successful, this would reduce the amount of generation lost to the HECO system during these periods when the HRSG must be offline.

We also want to express our strong appreciation for and continue to emphasize the importance of the ongoing good communication between KPLP and Alstom Power, and HECO. This is something that all parties have consciously worked on, and it shows. In particular the communication during outage events concerning status of the unit, repair progress and projected completion time is much appreciated and critical in coordinating efforts to keep the lights on.

We look forward to continuing to work with you in pursuing actions to address HRSG reliability concerns and the general reliability of the plant.

Please contact me if you have any questions.

Sincerely,

Thomas C. O'Connor

cc: Carl Caliboso, PUC
Ruedi Tobler, KPLP
Tom Joaquin



		GDP Chain-Type Price Index* (2000=1.000)	Change Factor based on GDP Chain-Type Price Index**	GNIPD (2000=100) based on Change Factor
2003	1			
	2			
	3			
	4			
2004	1	1.091		
	2		1.00518	
	3		1.00518	
	4		1.00518	
2005	1		1.00518	
	2		1.00518	
	3		1.00518	
	4		1.00518	
2006	1		1.00518	114.352 (114.352 is actual***)
	2		1.00518	114.944
	3		1.00518	115.540
	4		1.00518	116.138
2007	1		1.00518	116.739
	2		1.00518	117.344
	3		1.00518	117.952
	4		1.00518	118.563
2008	1		1.00518	119.177
	2		1.00518	119.794
	3		1.00518	120.414
	4		1.00518	121.038
2009	1		1.00518	121.665
	2		1.00518	122.295
	3		1.00518	122.928
	4		1.00518	123.565
2010	1	1.235	1.00518	124.205

- * GDP Chain-Type Price Index per Energy Information Administration / Annual Energy Outlook 2006 (Table A19, Macroeconomic Indicators) from the Internet (<http://www.eia.doe.gov/oiaf/aeo/pdf/appa.pdf>; visited site on 2/16/2006). Assumed GDP Chain-Type Price Index is for the first quarter of the year.
- ** e.g., $(1.235/1.091)^{(1/24)} = 1.00518$
- *** First quarter 2006 final GNIPD (2000=100) of 114.352 was released by the Bureau of Economic Analysis on 6/29/2006.

AES base GNIPD=First Quarter 1987 GNIPD = 72.465 (2000=100) on 6/29/2006 BEA publication.

AES Hawaii, Inc. 2007 Operational/Budget Forecasted Expenses 9/28/2006 Production Simulation Update -Rate Case

Assumptions:

Forced Outage Rate	1.00%	3rd Q 2006 GNPIPD	115.540
Base GNPIPD	72.465	1st Q 2007 GNPIPD	116.739
Capacity-\$/kWh available	\$0.044095	Fixed O&M-\$/kWh available	\$0.011
Variable O&M-\$/kWh purchased	\$0.0005		

	ONE BOILER			TWO BOILERS			EAF CALCULATION		TOTAL FACILITY					
	net MWh	Op Hrs	Avg MW	net MWh	Op Hrs	Avg MW	Monthly EAF	YTD EAF	Energy MWh	Fuel	Variable O&M	Fixed O&M	Capacity	Total Expense
Jan	0	0	0.000	132,883	738	180.009	99.00%	99.00%	132,883	\$3,580,639	\$105,936	\$2,325,291	\$5,846,150	\$11,858,017
Feb	0	0	0.000	119,578	664	180.006	99.00%	99.00%	119,578	\$3,222,122	\$95,329	\$2,100,263	\$5,280,394	\$10,698,108
Mar	0	0	0.000	132,495	736	179.996	99.00%	99.00%	132,495	\$3,570,172	\$105,627	\$2,325,291	\$5,846,150	\$11,847,240
Apr	0	0	0.000	128,563	714	180.010	99.00%	99.00%	128,563	\$3,464,233	\$102,492	\$2,250,282	\$5,657,565	\$11,474,572
May	0	0	0.000	132,408	736	180.000	99.00%	99.00%	132,408	\$3,567,831	\$105,557	\$2,325,291	\$5,846,150	\$11,844,830
Jun	0	0	0.000	128,477	714	179.990	99.00%	99.00%	128,477	\$3,461,899	\$102,423	\$2,250,282	\$5,657,565	\$11,472,169
Jul	0	0	0.000	132,365	735	179.990	99.00%	99.00%	132,365	\$3,603,676	\$106,618	\$2,349,422	\$5,846,150	\$11,905,866
Aug	0	0	90.000	132,495	736	179.996	99.00%	99.00%	132,495	\$3,607,221	\$106,723	\$2,349,422	\$5,846,150	\$11,909,515
Sep	0	0	0.000	128,909	716	179.990	99.00%	99.00%	128,909	\$3,509,585	\$103,834	\$2,273,634	\$5,657,565	\$11,544,619
Oct	21,384	238	0.000	89,381	497	179.986	83.03%	97.37%	110,765	\$2,433,421	\$89,220	\$1,970,483	\$4,903,223	\$9,396,347
Nov	0	0	0.000	128,434	714	180.006	99.00%	97.52%	128,434	\$3,496,667	\$103,452	\$2,273,634	\$5,657,565	\$11,531,318
Dec	0	0	0.000	132,538	736	180.005	99.00%	97.64%	132,538	\$3,608,400	\$106,757	\$2,349,422	\$5,846,150	\$11,910,730
Total	21,384	238	90.000	1,518,526	8,436	179.999		97.64%	1,539,910	\$41,125,866	\$1,233,968	\$27,142,718	\$67,890,779	\$137,393,331

DATA SOURCES AND NOTES:

Bonus: \$1,189,465

Total Expense: \$138,582,795

- Refer to the letter grid across the top of the page for the column address and the line number on the left side for the row number. General reference to a column without reference to a row means to use the data for the corresponding month. Otherwise a specific row reference is in () next to the column designation. Calculation on one sheet of the spreadsheet may draw on data from another sheet. Elements of a formula that reference data from another sheet are preceded by an "A:" if the data are from the SUMMARY sheet and preceded by a "B:" if the data are from the BACKUP sheet.
- Forced Outage Rate in cell F(9) is based on approximate actual performance.
 - Base GNPIPD in cell F(10) is the GNPIPD value for the 1st Quarter of 1987 per the AES-Hawaii PPA, Amendment 1, Exhibit 5, p14. Actual value will be from the same Bureau of Economic Analysis publication as the actual current GNPIPD (numerator in GNPIPD adjustment factor), per the May 3, 2001 letter agreement. For now, a recent 1Q1987 GNPIPD value is used for the Base GNPIPD.
 - Capacity cost per available kWh in cell F(11) is based on AES Hawaii PPA, Amendment No. 2 dated May 8, 2003, p. 2.
 - Variable O&M cost per kWh purchased in cell F(12) is based on AES-Hawaii PPA, Amendment 1, p7.
 - 3rd Q 2006 GNPIPD in cell K(9) is based on the GDP Chain-Type Price Index escalation per Energy Information Administration / Annual Energy Outlook 2006 (Table A19, (Macroeconomic Indicators), page 161, published February 2006) from the Internet (<http://www.eia.doe.gov/oi/af/aeo/pdf/appa.pdf>; visited site on 2/16/2006).

- 1st Q 2007 GNPIPD in cell K(10) is determined in same manner as presented in note above.
- Fixed O&M cost per available kWh in cell K(11) is based on AES-Hawaii PPA, Amendment 1, p7.
- The net MWh and Op Hrs in columns C and D, respectively and columns F and G, respectively are from the HECO 2007 Operational/Budget Production Simulation dtd 9/28/2006.
- The Avg MW in col E is calculated from C / D. The Avg MW in col H is calculated from F / G.
- The Monthly EAF in col I is calculated from ((B:C * 24) - B:D - B:E) / (B:C * 24).
- The YTD EAF in col J is calculated as follows. The first month is from I. Subsequent months are calculated from J (from previous month) * (sum B:C(existing and previous months) * 24) + (I * B:C * 24) / (sum B:C(existing and previous months) * 24).
- The Energy MWh in col K is calculated from C + F.
- The Fuel cost in col L is calculated from ((B:J * B:G * F) + (B:H * B:G * C)) * 1000 / 100.
- The Variable O&M cost in col M is calculated from F(12) * 1000 * B:G * K.
- The Fixed O&M cost in col N is calculated from K(11) * 1000 * B:F * B:G.
- The Capacity cost in col O is calculated from F(11) * 1000 * B:F.
- The Total Expense in col P is calculated by L + M + N + O.
- The Bonus is calculated on the "Bonus" and "Detailed Bonus Calc" sheets.

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 DOCKET NO. 2006-0386
 PAGE 1 OF 4

[illegible]

page 3 of 3 (BONUS sheet)

Workbook Modified: 11-Aug-06
Latest Data Input: 13-Oct-06
Print: 16-Dec-06

AES Hawaii, Inc. 2007 Operational/Budget Forecasted Expenses

9/28/2006 Production Simulation Update - Rate Case

AES Availability Bonus

**Two Year Running Avg.
Equivalent Availability Factor 97.13%**

Per PPA Section 5 Availability bonus = \$15,000 (1987\$) per one tenth of a percentage point over 91%, adjusted in accordance with Section 8.1C

Per PPA Section 8 All dollar values noted in Sections 5.2 and 8.1 will be adjusted each Contract Year in accordance with the following formula:

**Bonus Corrected = ((C + U) / (C + E)) X GNPIPD Ratio X Liquidated Damages
(Uncorrected)**

**C = Capacity Charge
E = Escalated Energy Charge
U = Unescalated Energy Charge**

GNPIPD current (forecasted 1st Q for year of payment)	116.739	
GNPIPD base	72.465	
GNPIPD Adjustment Factor	1.611	
C	4.4095	cents/kWh
U (Fuel equation with 180 MW * EAF as input for Variable O&M component (0.05 cents/kWh) + Fixed O&M component (1.1 cents/kWh))	2.84	cents/kWh
E (U * (GNPIPD current/GNPIPD base))	4.5723	cents/kWh
((C+U)/(C+E))	0.8069282	
EAF > 91% (truncated to nearest 0.1%)	6.1%	
Bonus uncorrected	\$915,000	
Bonus Corrected	\$1,189,465	

AES HAWAII, INC. BONUS EQUIVALENT AVAILABILITY CALCULATION

Assumption of forced outage rate for Contract Year 14 = 1.0 percent.

Month	Potential kWh	Available kWh	Monthly Percentage	Contract Year Cumulative Percentage
Contract Year 14				
Oct-05	133,920,000	133,920,000	100.00%	100.00%
Nov-05	129,600,000	129,600,000	100.00%	100.00%
Dec-05	133,920,000	133,918,449	100.00%	100.00%
Jan-06	133,920,000	94,848,511	70.82%	92.65%
Feb-06	120,960,000	98,541,482	81.47%	90.57%
Mar-06	133,920,000	132,223,208	98.73%	91.96%
Apr-06	129,600,000	128,032,137	98.79%	92.93%
May-06	133,920,000	124,015,619	92.60%	92.89%
Jun-06	129,600,000	129,452,093	99.89%	93.66%
Jul-06	133,920,000	133,920,000	100.00%	94.30%
Aug-06	133,920,000	133,919,871	100.00%	94.83%
Sep-06	129,600,000	129,599,652	100.00%	95.28%
Totals	1,576,800,000	1,501,991,022		95.26%

Notes

1. Actual data used through September 2006.

TWO YEAR RUNNING AVERAGE EAF FOR CONTRACT YEARS 13 AND 14	97.21%
PPA EAF BONUS THRESHOLD	91.0%
PPA BONUS EAF FACTOR (Truncated to 0.1%)	6.2%
PPA BONUS IN UNCORRECTED DOLLARS (\$1987)	\$930,000.00
PPA BONUS CORRECTED FORMULA	

Capacity = C	C in cents/kWh =	4.4095
Uncorrected Energy = U	U in cents / kWh = ((fuel equation with 180 MW*EAF as input) + 1.10 + 0.05) =	2.84
Corrected Energy = E	E = U * GNPIPD Adjustment Factor =	4.48
	GNPIPD Current value assumed (on payment date)=	114.352
GNPIPD adjustment factor =	Current value / 1987 1st Qtr value (72.465) =	1.5780
(C + U) / (C + E) =		0.815430145

PPA BONUS PAYMENT CORRECTED	((C + U)/(C + E)) * GNPIPD adjustment factor * Uncorrected Bonus	\$1,196,676.36
EAF BONUS	CONTRACT YEARS 13 AND 14 Payable November, 2006	\$1,196,676.36

Assumption of forced outage rate for Contract Year 15 = 1.0 percent.

Month	Potential kWh	Available kWh	Monthly Percentage	Contract Year Cumulative Percentage
Contract Year 15				
Oct-06	133,920,000	132,580,800	99.00%	99.00%
Nov-06	129,600,000	128,304,000	99.00%	99.00%
Dec-06	133,920,000	132,580,800	99.00%	99.00%
Jan-07	133,920,000	132,580,800	99.00%	99.00%
Feb-07	120,960,000	119,750,400	99.00%	99.00%
Mar-07	133,920,000	132,580,800	99.00%	99.00%
Apr-07	129,600,000	128,304,000	99.00%	99.00%
May-07	133,920,000	132,580,800	99.00%	99.00%
Jun-07	129,600,000	128,304,000	99.00%	99.00%
Jul-07	133,920,000	132,580,800	99.00%	99.00%
Aug-07	133,920,000	132,580,800	99.00%	99.00%
Sep-07	129,600,000	128,304,000	99.00%	99.00%
Totals	1,576,800,000	1,561,032,000		99.00%

Notes

1.

TWO YEAR RUNNING AVERAGE EAF FOR CONTRACT YEARS 14 AND 15	97.13%
PPA EAF BONUS THRESHOLD	91.0%
PPA BONUS EAF FACTOR (Truncated to 0.1%)	6.1%
PPA BONUS IN UNCORRECTED DOLLARS (\$1987)	\$915,000.00
PPA BONUS CORRECTED FORMULA	

Capacity = C	C in cents/kWh =	4.4095
Uncorrected Energy = U	U in cents / kWh = ((fuel equation with 180 MW*EAF as input) + 1.10 + 0.05) =	2.84
Corrected Energy = E	E = U * GNPIPD Adjustment Factor =	4.57
	GNPIPD Current value assumed (on payment date)=	116.739
GNPIPD adjustment factor =	Current value / 1987 1st Qtr value (72.465) =	1.6110
(C + U) / (C + E) =		0.806928198

PPA BONUS PAYMENT CORRECTED	((C + U)/(C + E)) * GNPIPD adjustment factor * Uncorrected Bonus	\$1,189,464.61
EAF BONUS	CONTRACT YEARS 14 AND 15 Payable November, 2007	\$1,189,464.61

HPOWER 2007 Operational/Budget Forecasted Expenses

9/28/06 Production Simulation Update

Assumptions:

On-Peak, Weekday Availability	87.00%
Capacity Charge	\$0.0489 /kWh available weekday on-peak
Capacity	46,000 kW
On Peak Energy Rate-1st 644 MWh/day	\$0.1275 /kWh purch
On Peak Energy Rate-Excess MWh/day	\$0.1275 /kWh purch
Off Peak Energy Rate-1st 250 MWh/day	\$0.0969 /kWh purch
Off Peak Energy Rate-Excess MWh/day	\$0.0969 /kWh purch

	On-Peak MWh	Off-Peak MWh	Total MWh	Total Energy	Capacity	Total Expenses
Jan	14,509	10,364	24,873	\$2,854,294	\$520,556.15	\$3,374,850
Feb	14,735	10,525	25,260	\$2,898,635	\$520,556.15	\$3,419,191
Mar	17,369	12,406	29,775	\$3,416,792	\$602,749.22	\$4,019,541
Apr	16,808	12,006	28,814	\$3,306,572	\$575,351.53	\$3,881,924
May	17,369	12,406	29,775	\$3,416,792	\$630,146.92	\$4,046,938
Jun	16,808	12,006	28,814	\$3,306,572	\$575,351.53	\$3,881,924
Jul	13,556	9,683	23,239	\$2,666,795	\$465,760.76	\$3,132,556
Aug	17,369	12,406	29,775	\$3,416,792	\$630,146.92	\$4,046,938
Sep	16,808	12,006	28,814	\$3,306,572	\$547,953.84	\$3,854,526
Oct	17,369	12,406	29,775	\$3,416,792	\$630,146.92	\$4,046,938
Nov	16,808	12,006	28,814	\$3,306,572	\$602,749.22	\$3,909,322
Dec	17,369	12,406	29,775	\$3,416,792	\$575,351.53	\$3,992,143
Total	196,877	140,627	337,504	\$38,729,972	\$6,876,821	
Total Expense						\$45,606,793

DATA SOURCES AND NOTES:

Refer to the letter grid across the top of the page for the column address and the line number on the left side for the row number. General reference to a column without reference to a row means to use the data for the corresponding month. Otherwise a specific row reference is in () next to the column designation. Calculation on one sheet of the spreadsheet may draw on data from another sheet. Elements of a formula that reference data from another sheet are preceded by an "A:" if the data are from the SUMMARY sheet and preceded by a "B:" if the data are from the BACKUP sheet.

- On-Peak is defined as the time period between 7:00 AM and 9:00 PM on Monday through Friday.
- Off-Peak is defined as the time period between 9:00 PM on one day and 7:00 AM the next day.
- On-Peak, Weekday Availability in col E(11) is based on HECO projection of HPOWER performance during such periods. Maintenance outages up to 3 weeks per year, do not count against this availability statistic. Only forced outages during the specific weekday, on-peak period count against this value.
- Capacity Charge in col E(12) is calculated per the HPOWER PPA, Firm Capacity Amendment, pD-6.
- Capacity in col E(13) is specified in HPOWER PPA, Firm Capacity Amendment, pB-8.
- On-Peak and Off-Peak Energy Rates in cols. E(14), E(15), E(16) and E(17) are described in the HPOWER PPA, Firm Capacity Amendment, Appendix D, pgs D-3 to D-5. Energy rates used are 14.60 cents/kWh on-peak, 11.05 cents/kWh off-peak as adjusted by operation of the contract "discount", pgs D-4 to D-5.
- The On-Peak MWh data in col C and the Off-Peak MWh data in col D are from HECO 2007 Operational/Budget Production Simulation dtd 9/28/06.
- The Total MWh in col E is calculated from C + D.
- The Total Energy cost in col F is calculated from B:M + B:R.
- The Capacity cost in col G is calculated from B:H * E(13) * E(12).
- The Total Expenses in col H is calculated from F + G.

HPOWER 2007 Operational/Budget Forecasted Expenses 9/28/06 Production Simulation Update

Assumptions: See SUMMARY sheet

AVAILABILITY DATA						ON-PEAK					OFF-PEAK					
Calendar Days	Number of Weekdays	ON-PEAK Weekday Only				Potential First 644 MWh/Day	Forecasted				Potential First 250 MWh/Day	Forecasted				Energy
		Number On-Peak Hours	Planned Maintenance Hours	Forced Outage Hours	On-Peak Available Hours		First 644 MWh/Day	Excess Over 644 MWh/Day	Excess Over 644 MWh/Day	Energy		First 250 MWh/Day	Excess Over 250 MWh/Day	Excess Over 250 MWh/Day	Energy	
31	23	322		56	35	231	16,100	\$1,850,301	0	\$0	\$1,850,301	7,510	\$727,531	2,854	\$276,462	\$1,003,993
28	20	280		14	35	231	16,744	\$1,879,045	0	\$0	\$1,879,045	6,920	\$670,375	3,605	\$349,215	\$1,019,590
31	22	308		0	40	268	19,964	\$2,214,941	0	\$0	\$2,214,941	7,750	\$750,781	4,856	\$451,069	\$1,201,851
30	21	294		0	38	256	19,320	\$2,143,491	0	\$0	\$2,143,491	7,500	\$726,563	4,506	\$436,519	\$1,163,081
31	23	322		0	42	280	19,964	\$2,214,941	0	\$0	\$2,214,941	7,750	\$750,781	4,856	\$451,069	\$1,201,851
30	21	294		0	38	256	19,320	\$2,143,491	0	\$0	\$2,143,491	7,500	\$726,563	4,506	\$436,519	\$1,163,081
31	22	308		70	31	207	14,812	\$1,728,754	0	\$0	\$1,728,754	7,430	\$719,781	2,253	\$218,259	\$938,041
31	23	322		0	42	280	19,964	\$2,214,941	0	\$0	\$2,214,941	7,750	\$750,781	4,856	\$451,069	\$1,201,851
30	20	280		0	36	244	19,320	\$2,143,491	0	\$0	\$2,143,491	7,500	\$726,563	4,506	\$436,519	\$1,163,081
31	23	322		0	42	280	19,964	\$2,214,941	0	\$0	\$2,214,941	7,750	\$750,781	4,856	\$451,069	\$1,201,851
30	22	308		0	40	268	19,320	\$2,143,491	0	\$0	\$2,143,491	7,500	\$726,563	4,506	\$436,519	\$1,163,081
31	21	294		0	38	256	19,964	\$2,214,941	0	\$0	\$2,214,941	7,750	\$750,781	4,856	\$451,069	\$1,201,851
365	261	3,654		140	457	3,057	224,756	\$25,106,770	0	\$0	\$25,106,770	90,610	\$8,777,844	50,017	\$4,845,358	\$13,623,202

DATA SOURCES AND NOTES: See SUMMARY sheet and below

Refer to the letter grid across the top of the page for the column address and the line number on the left side for the row number. General reference to a column without reference to a row means to use the data for the corresponding month. Otherwise a specific row reference is in () next to the column designation. Calculation on one sheet of the spreadsheet may draw on data from another sheet. Elements of a formula that reference data from another sheet are preceded by an "A:" if the data are from the SUMMARY sheet and preceded by a "B:" if the data are from the BACKUP sheet.

12. The Number of Weekdays in col D is from the 2007 calendar.
13. The Number of On-Peak Hours (Hrs) in col E is calculated from D * 14.
14. Planned Maintenance Hours in col F is based on the HECO 2007 planned maintenance schedule approved 7/21/06. The schedule consists of 1/20/07 to 1/31/07 for 8 weekdays of 23 MW loss, 2/01/07 to 02/04/07 for 2 weekdays of 23 MW loss. Also from 7/14/07 to 7/29/07 for 10 weekdays of 23 MW loss. Col. F, January is (4)*(14), February is (1)*(14) and July is (5)*(14). Only those hours during weekdays and on-peak are included.
15. The Forced Outage Hours in col G is calculated from (1 - A:E(11)) * E - F.
16. The On-Peak Available Hours in col H is calculated from E - F - G.
17. The Potential First 644 MWh per Day (46 MW * 14 hr/day) in col I is calculated from 644 * C. However, to account for maintenance, January is calculated as (644 MWh/day)*(19 days)+(23 MW)*(14 hrs/day)*(12 days). Feb. is (644*24)+(23*14*4), and July is (644*15)+(23*14*16).
18. The First 644 MWh per Day cost in col J is calculated from A:E(14) * A:C * 1000 when A:C is less than I, otherwise, from A:E(14) * I * 1000.
19. The Excess Over 644 MWh per Day in col K is calculated from A:C - I when A:C is greater than I, otherwise equals zero.
20. The Excess Over 644 MWh per day cost in col L is calculated from A:E(15) * K * 1000 when K is greater than zero, otherwise, equals zero.
21. The Energy cost in col M is calculated from (A:E(14) * A:C * 1000 when K equals zero, otherwise, is calculated from (A:E(15) * 1000 * K) + (A:E(14) * 1000 * I).
22. The Potential First 250 MWh per Day (25 MW * 10 hr/day) in col N is calc. from 250 * C. However, to account for maintenance, the month of Jan. is calculated (250 MWh/day*19 days)+(23 MW*10 hrs/day*12 days); similarly, for Feb. (250*24)+(23*10*4) and July, (250*15)+(23*10*16).
23. The First 250 MWh per Day cost in col O is calculated from A:E(16) * A:D * 1000 when A:D is less than N, otherwise, is calculated from A:E(16) * N * 1000.
24. The Excess Over 250 MWh per Day in col P is equal to zero when N is greater than A:D, otherwise, is calculated from A:D - N.
25. The Excess Over 250 MWh per Day cost in col Q is calculated from A:E(17) * P * 1000 when P is greater than zero, otherwise, equals zero.
26. The Energy cost in col R is calculated from A:E(16) * 1000 * A:D when P equals zero, otherwise, is calculated from (A:E(17) * 1000 * P) + (A:E(16) * 1000 * N).

H-POWER AVAILABILITY - AVERAGE OF CONTRACT YEARS 1-14

CONTRACT YEAR	PERIOD	ON-PEAK FIRM CAPACITY OBLIGATION	DERATED KILOWATT-HOURS	AVAILABLE KILOWATTHOURS	% YEAR-TO-DATE ON-PEAK AVAILABILITY *
	LIFE	2,217,376,000	371,448,970	1,913,547,030	
1	1992-1993	159,068,000	11,191,603	147,876,397	92.960
2	1993-1994	157,864,000	21,524,451	136,339,549	86.370
3	1994-1995	158,424,000	9,789,344	148,634,656	93.820
4	1995-1996	157,780,000	21,179,832	136,600,168	86.580
5	1996-1997	158,424,000	32,394,353	126,029,647	79.550
6	1997-1998	158,424,000	16,630,120	141,793,880	89.500
7	1998-1999	158,424,000	24,197,953	134,226,047	84.730
8	1999-2000	159,068,000	28,106,208	140,621,792	88.404
9	2000-2001	157,780,000	37,472,981	129,967,019	82.370
10	2001-2002	157,780,000	52,273,145	115,166,855	72.990
11	2002-2003	158,424,000	22,953,911	145,130,089	91.610
12	2003-2004	159,068,000	31,278,356	137,449,644	86.410
13	2004-2005	158,424,000	29,841,122	138,242,878	87.260
14	2005-2006	158,424,000	32,615,591	135,468,409	85.510
Average CY 1-14 =		158,384,000	26,532,069	136,681,931	86.290

CY	% On-Peak Availability	
10	72.990	
11	91.610	
12	86.410	
13	87.260	
14	85.510	
Average: CY 10-14		84.756

* On-peak, weekday availability, excluding maintenance.

Sanction: \$10,000 per full percentage point below 90% on-peak availability for each contract year.

- NOTES: 1. Power Purchase Contract (PPC) effective March 10, 1986.
2. Firm Capacity Amendment (FCA) signed June 30, 1992.
3. FCA valid for twenty-two (22) years; expires July 31, 2015.
4. Early termination of PPC could occur on Oct. 6, 2008 based on 52 months' notice (June 6, 2004).
5. Contract period is from July to June, except for Contract Year 1, which is June to June.

H-POWER AVAILABILITY - AVERAGE OF CONTRACT YEARS 1-9 & 11-14

CONTRACT YEAR	PERIOD	ON-PEAK FIRM CAPACITY OBLIGATION	DERATED KILOWATT-HOURS	AVAILABLE KILOWATTHOURS	% YEAR-TO-DATE ON-PEAK AVAILABILITY *
	LIFE	2,217,376,000	371,448,970	1,913,547,030	
1	1992-1993	159,068,000	11,191,603	147,876,397	92.960
2	1993-1994	157,864,000	21,524,451	136,339,549	86.370
3	1994-1995	158,424,000	9,789,344	148,634,656	93.820
4	1995-1996	157,780,000	21,179,832	136,600,168	86.580
5	1996-1997	158,424,000	32,394,353	126,029,647	79.550
6	1997-1998	158,424,000	16,630,120	141,793,880	89.500
7	1998-1999	158,424,000	24,197,953	134,226,047	84.730
8	1999-2000	159,068,000	28,106,208	140,621,792	88.404
9	2000-2001	157,780,000	37,472,981	129,967,019	82.370
10	2001-2002				
11	2002-2003	158,424,000	22,953,911	145,130,089	91.610
12	2003-2004	159,068,000	31,278,356	137,449,644	86.410
13	2004-2005	158,424,000	29,841,122	138,242,878	87.260
14	2005-2006	158,424,000	32,615,591	135,468,409	85.510
Average: CY 1-14 excluding CY 10 =		158,430,462	24,551,987	138,336,937	87.313

CY	% On-Peak Availability
9	82.370
11	91.610
12	86.410
13	87.260
14	85.510

Average: CY 9-14 excluding CY 10 =

86.632

* On-peak, weekday availability, excluding maintenance.

Sanction: \$10,000 per full percentage point below 90% on-peak availability for each contract year.

- NOTES: 1. Power Purchase Contract (PPC) effective March 10, 1986.
2. Firm Capacity Amendment (FCA) signed June 30, 1992.
3. FCA valid for twenty-two (22) years; expires July 31, 2015.
4. Early termination of PPC could occur on Oct. 6, 2008 based on 52 months' notice (June 6, 2004).
5. Contract period is from July to June, except for Contract Year 1, which is June to June.

H-POWER
CALCULATION OF ON-PEAK AVAILABILITY

OFC '97 VERSION

HPAVAIL 14 EXCEL / WF 3/23/98

CONTRACT YEAR: 14 PERIOD: Jul 1, 2005-Jun 30, 2006

MONTH	ON-PEAK FIRM CAPACITY OBLIGATION	DERATED KILOWATTHOURS	AVAILABLE KILOWATTHOURS	% ON-PEAK AVAILABILITY ¹	% YEAR-TO-DATE ON-PEAK AVAILABILITY ¹
Jul 05	13,524,000	2,659,348	10,864,652	80.34	80.34
Aug 05	14,812,000	7,446,413	7,365,587	49.73 ³	64.34
Sep 05	14,168,000	3,051,094	11,116,906	78.46	69.05
Oct 05	13,524,000	5,285,654	8,238,346	60.92 ³	67.08
Nov 05	14,168,000	2,200,348	11,967,652	84.47	70.59
Dec 05	14,168,000	4,126,056	10,041,944	70.88 ³	70.64
Jan 06	14,168,000	1,570,542	12,597,458	88.91	73.27
Feb 06	12,880,000	1,264,084	11,615,916	90.19	75.22
Mar 06	14,812,000	1,543,316 ⁶	13,268,684	89.58	76.91
Apr 06	12,880,000	1,237,627	11,642,373	90.39	78.16 ⁵
May 06	14,812,000	1,078,663	13,733,337	92.72	79.56 ⁵
Jun 06	14,168,000	1,152,446	13,015,554	91.87	80.60 ⁵
TOTALS:	168,084,000	32,615,591	135,468,409		
³ 49 weeks (less 3wk maint.)	158,424,000 ³		135,468,409	85.51 ⁴	

2005 Rate Case Availability: ²

90.00 %

¹ On-peak, weekday availability, excluding maintenance.

² 2005 Rate Case recovery of capacity is pegged at 90% availability (on-peak, weekday availability, excluding maintenance)

³ H-POWER identifies 5 days of maintenance in the months of Aug 2005, Oct 2005, and Dec 2005. Adjustment to be taken in the 49-week calculation, Line 38.

⁴ The City and HECO do not agree on the final on-peak availability percentage for Contract Year 14. City calculates 245 days at 85.86% and HECO calculates 246 days at 85.51%.

⁵ Do not use year-to-date % as they are not accurate due to the maintenance adjustment required at the end of the contract year.

⁶ Corrected "Derated kWh" from 1,393,316 to 1,543,316 for March 2006. Recalculated March 29 & 30 incident using 40 MW instead of 46 MW.

DERIVATION OF CHEVRON AND TESORO PURCHASED ENERGY EXPENSES
(Ref. HECO-506)

Assumptions:

1. 2007 Test Year on- and off-peak avoided energy cost rates

On-Peak 14.60 cents/kwh

Off-Peak 11.05 cents/kwh

2. Purchased kWh

Tesoro: 5,304,158 kWh

Chevron: 588,923 kWh

Purchased expense (rounded to dollars):

Tesoro:

On-peak energy expense = $5,304,158 * 14/24 * 0.1460 = \$451,737$

Off-peak energy expense = $5,304,158 * 10/24 * 0.1105 = \$244,212$

Total energy expense = \$695,949

Chevron:

On-peak energy expense = $588,923 * 14/24 * 0.1460 = \$50,157$

Off-peak energy expense = $588,923 * 10/24 * 0.1105 = \$27,115$

Total energy expense = \$77,272

HAWAIIAN ELECTRIC COMPANY, INC.
2007 TEST YEAR - PRODUCTION VARIANCES 2005 VS. 2007

<u>Ops/</u> <u>Maint</u>	<u>Lab/</u> <u>NL</u>	<u>Projects</u>	<u>NARUC</u>	<u>Code</u>	<u>Type</u>	<u>2005</u>	<u>2007</u>	<u>Inc/(Dec)</u>	<u>%Inc</u> <u>/Dec</u>	<u>Comments</u>
Ops	Lab	Waiau -- Policy/Proced	506020	PEZ240WSTNENPIZZZZ150	Labor	278,997	513,216	234,219	84%	Change in allocation of ITS software maint and purchases to key expense only code blocks. See further explanation in HECO T-10.
Ops	Lab	Kahe	502030	PIK242KSTNENPIZZZZ150	Labor	1,590,269	1,868,577	278,308	18%	The increase is primarily due to staffing increases. See Heco T-6 for futher explanation on the increase.
Ops	Lab	Waiau	502020	PIW242WSTNENPIZZZZ150	Labor	1,735,943	2,215,546	479,603	28%	The increase is primarily due to the 24/7 staffing starting in 2005. See Heco T-6 for futher explanation on the increase.
Ops	Lab	Waiau	505020	PIW243WSTNENPIZZZZ150	Labor	1,717,439	2,183,895	466,456	27%	The increase is primarily due to the 24/7 staffing starting in 2005. See Heco T-6 for futher explanation on the increase.
Ops	Lab	Waiau -- Permit/Reg Req- Wastewater	506020	PJW876WSTNENPJZZZZ150	Labor	27,325	259,249	231,924	849%	For budgeting purposes Code Block assignment to a specific location, WST. Actual cost are reported in various locations. Cost is not comparable at the codeblock level.
Ops	NL	Prod Oper -- Incentive Recog Prog	506030	PFC723PPONENPFZZZZ900	O/S	0	279,000	279,000	--	Expense to be adjusted out.Represent the Merit Key Contributor and Merit Team Awards budget for the Production area. The 2005 cost when recorded as labor cost is charged to code PFC723PPONENPFZZZZ150 and totaled \$173,177.
Ops	NL	OMProj03_ - Distributed Generation	548	PIM244PDGNEOMProj03501	O/S	0	405,900	405,900	--	New Distributed Generation expense not in 2005.
Ops	NL	OMProj03_ - Distributed Generation	548	PIM244PDGNEOMProj03570	Rental	0	2,916,000	2,916,000	--	New Distributed Generation expense not in 2005.
Ops	NL	Other Gen -- Research New Tech	549	PNR730PPRNENPASVP7Z50	O/S	0	249,000	249,000	--	Represent a placeholder for matching funds that would be payable to EPRI forR&D initiatives which were not actively pursued in 2005. HECO actually incurred \$17k in 2005 which were recorded in different codeblocks. See explanation of R&D cost on in Heco T-6.

HAWAIIAN ELECTRIC COMPANY, INC.
2007 TEST YEAR - PRODUCTION VARIANCES 2005 VS. 2007

<u>Ops/</u> <u>Maint</u>	<u>Lab/</u> <u>NL</u>	<u>Projects</u>	<u>NARUC</u>	<u>Code</u>	<u>Type</u>	<u>2005</u>	<u>2007</u>	<u>Inc/(Dec)</u>	<u>%Inc</u> <u>/Dec</u>	<u>Comments</u>
Ops	NL	Other Gen -- Dev & Demo New Tech	549	PNR731PPRNENPASVP7Z50	O/S	76,714	505,000	428,286	558%	Represent funding for renewable energy initiatives and biomass initiatives which were not actively pursued until late in 2005. HECO actually incurred \$217K in 2005 which were recorded in different codeblocks. See explanation of R&D cost in Heco T-6.
			1							
Ops	NL	Waiau -- Mng Proj	500020	PYA211WSTNENPYZZZZZ90	O/S	610,714	321,429	(289,285)	-47%	Represents decrease of Kahe 7 amortization to \$26,785.71 per month starting July 2005 in accordance with Docket No. 04-0113, HECO 2005 Test Year Rate Case - Stipulated Settlement Letter, Exhibit II, Page 3 of 14 and Exhibit V.
Maint	Lab	Kahe	512030	PIL259KSTNENPIZZZZZ150	Labor	117,716	799,023	681,307	579%	2007 budget is by prime location, Hono, Waiau or Kahe, but much of the actual costs are recorded to specific site and generation units. Therefore, cost is not comparable at the codeblock level.
Maint	Lab	Kahe	513030	PIL262KSTNENPIZZZZZ150	Labor	3,600	445,137	441,537	12265%	2007 budget is by prime location, Hono, Waiau or Kahe, but much of the actual costs are recorded to specific site and generation units. Therefore, cost is not comparable at the codeblock level.
Maint	Lab	Kahe	514030	PIP256KSTNENPIZZZZZ150	Labor	129,487	380,977	251,490	194%	Represents primarily the O&M Engineer positions vacant in 2005, but planned to be filled in 2007.
Maint	Lab	P0001278 - Honolulu 8 Overhaul	512010	PIT257H08NEP0001278150	Labor	0	287,886	287,886	--	Overhaul scheduled in 2007. No overhaul scheduled in 2005 for this unit. Cost is not comparable from 2005 to 2007.
Maint	Lab	P0000846 - Kahe 1 Overhaul	512030	PIT257K01NEP0000846150	Labor	0	292,097	292,097	--	Overhaul scheduled in 2007. No overhaul scheduled in 2005 for this unit. Cost is not comparable from 2005 to 2007.
Maint	Lab	P0000650 - Kahe 2 Overhaul	512030	PIT257K02NEP0000650150	Labor	503,772	0	(503,772)	-100%	Overhaul performed in 2005. No overhaul scheduled in 2007 for this unit. Cost is not comparable from 2005 to 2007.
Maint	Lab	P0001105 - Kahe 3 Overhaul	512030	PIT257K03NEP0001105150	Labor	0	850,885	850,885	--	Overhaul scheduled in 2007. No overhaul scheduled in 2005 for this unit. Cost is not comparable from 2005 to 2007.

HAWAIIAN ELECTRIC COMPANY, INC.
2007 TEST YEAR - PRODUCTION VARIANCES 2005 VS. 2007

<u>Ops/</u> <u>Maint</u>	<u>Lab/</u> <u>NL</u>	<u>Projects</u>	<u>NARUC</u>	<u>Code</u>	<u>Type</u>	<u>2005</u>	<u>2007</u>	<u>Inc/(Dec)</u>	<u>%Inc</u> <u>/Dec</u>	<u>Comments</u>
Maint	Lab	P0000844 - Kahe 6 Overhaul	512030	PIT257K06NEP0000844150	Labor	424,331	0	(424,331)	-100%	Overhaul performed in 2005. No overhaul scheduled in 2007 for this unit. Cost is not comparable from 2005 to 2007.
Maint	Lab	P0001279 - Waiau 5 Overhaul	512020	PIT257W05NEP0001279150	Labor	0	607,327	607,327	--	Overhaul scheduled in 2007. No overhaul scheduled in 2005 for this unit. Cost is not comparable from 2005 to 2007.
Maint	Lab	P0000654 - Waiau 6 Overhaul	512020	PIT257W06NEP0000654150	Labor	211,205	0	(211,205)	-100%	Overhaul performed in 2005. No overhaul scheduled in 2007 for this unit. Cost is not comparable from 2005 to 2007.
Maint	Lab	P0001106 - Waiau 7 Overhaul	512020	PIT257W07NEP0001106150	Labor	0	790,161	790,161	--	Overhaul scheduled in 2007. No overhaul scheduled in 2005 for this unit. Cost is not comparable from 2005 to 2007.
Maint	Lab	P0001105 - Kahe 3 Overhaul	513030	PIT260K03NEP0001105150	Labor	0	229,482	229,482	--	Overhaul scheduled in 2007. No overhaul scheduled in 2005 for this unit. Cost is not comparable from 2005 to 2007.
Maint	Lab	Kahe	513030	PIT260KSTNENPIZZZZ150	Labor	37,915	292,711	254,796	672%	Represent labor cost for condenser cleaners. 2005 vacancies during the year cause the labor cost to be less than projected for the year.
Maint	Lab	P0001279 - Waiau 5 Overhaul	513020	PIT260W05NEP0001279150	Labor	0	290,190	290,190	--	Overhaul scheduled in 2007. No overhaul scheduled in 2005 for this unit. Cost is not comparable from 2005 to 2007.
Maint	Lab	P0001106 - Waiau 7 Overhaul	513020	PIT260W07NEP0001106150	Labor	0	433,951	433,951	--	Overhaul scheduled in 2007. No overhaul scheduled in 2005 for this unit. Cost is not comparable from 2005 to 2007.
Maint	Lab	Waiau	513020	PIT260WSTNENPIZZZZ150	Labor	50,762	292,711	241,949	477%	Represent labor cost for condenser cleaners. 2005 vacancies during the year cause the labor cost to be less than projected for the year.
Maint	Lab	P0000937 - Waiau 9 Major Inspection	553	PIT272W09NEP0000937150	Labor	281,114	0	(281,114)	-100%	Major Inspection performed in 2005. No major inspection scheduled in 2007. Cost is not comparable from 2005 to 2007.
Maint	Lab	P0001277 - Waiau 9 Overhaul	553	PIT272W09NEP0001277150	Labor	0	303,829	303,829	--	Waiau 9 overhaul is projected in 2007 with an estimated total cost of \$1,058k. No overhaul scheduled in 2007. Cost is not comparable from 2005 to 2007.

HAWAIIAN ELECTRIC COMPANY, INC.
2007 TEST YEAR - PRODUCTION VARIANCES 2005 VS. 2007

<u>Ops/</u> <u>Maint</u>	<u>Lab/</u> <u>NL</u>	<u>Projects</u>	<u>NARUC</u>	<u>Code</u>	<u>Type</u>	<u>2005</u>	<u>2007</u>	<u>Inc/(Dec)</u>	<u>%Inc</u> <u>/Dec</u>	<u>Comments</u>
Maint	Lab	Waiau	512020	PIX259WSTNENPIZZZZ150	Labor	66,138	827,404	761,266	1151%	2007 budget is by prime location, Hono, Waiau or Kahe, but much of the actual costs are recorded to specific site and generation units. Therefore, cost is not comparable at the codeblock level.
Maint	Lab	Waiau	513020	PIX262WSTNENPIZZZZ150	Labor	5,185	545,508	540,323	10421%	2007 budget is by prime location, Hono, Waiau or Kahe, but much of the actual costs are recorded to specific site and generation units. Therefore, cost is not comparable at the codeblock level.
Maint	NL	Kahe	512030	PIL258KSTNENPIZZZZ201	Matl	200,306	0	(200,306)	-100%	2007 budgeted in P0001271, Power Supply O&M Program. P0001271 was created in 2007 to capture project cost exceeding \$100,000 each. Cost is not comparable at the codeblock level.
Maint	NL	Kahe	512030	PIL258KSTNENPIZZZZ501	O/S	11,220	360,000	348,780	3109%	2007 budget is by prime location, Hono, Waiau or Kahe, but much of the actual costs are recorded to specific site and generation units. Therefore, cost is not comparable at the codeblock level.
Maint	NL	P0001308 - Smart Signal	512030	PIL258KSTNEP0001308462	Softw	0	448,642	448,642	--	Smart Signal expense to be normalized by \$598,000 per HECO T-6. 50% or \$299,000 to Waiau, 50% or \$299,000 to Kahe. 2007 expense will be \$149,642.
Maint	NL	Kahe 3	512030	PIL259K03NENPIZZZZ201	Matl	304,677	0	(304,677)	-100%	2007 budget is by prime location, Hono, Waiau or Kahe, but much of the actual costs are recorded to specific site and generation units. Therefore, cost is not comparable at the codeblock level.
Maint	NL	Kahe 6	512030	PIL259K06NENPIZZZZ501	O/S	242,689	0	(242,689)	-100%	2007 budget is by prime location, Hono, Waiau or Kahe, but much of the actual costs are recorded to specific site and generation units. Therefore, cost is not comparable at the codeblock level.
Maint	NL	Kahe	512030	PIL259KSTNENPIZZZZ501	O/S	540,439	336,000	(204,439)	-38%	2007 budget is by prime location, Hono, Waiau or Kahe, but much of the actual costs are recorded to specific site and generation units. Therefore, cost is not comparable at the codeblock level.
Maint	NL	P0001271 - Power Supply O&M Progr	513030	PIL260KSTNEP0001271501	O/S	0	400,000	400,000	--	2007 budgeted in P0001271, Power Supply O&M Program. P0001271 was created in 2007 to capture project cost exceeding \$100,000 each. Cost is not comparable at the codeblock level.

**HAWAIIAN ELECTRIC COMPANY, INC.
2007 TEST YEAR - PRODUCTION VARIANCES 2005 VS. 2007**

<u>Ops/</u> <u>Maint</u>	<u>Lab/</u> <u>NL</u>	<u>Projects</u>	<u>NARUC</u>	<u>Code</u>	<u>Type</u>	<u>2005</u>	<u>2007</u>	<u>Inc/(Dec)</u>	<u>%Inc</u> <u>/Dec</u>	<u>Comments</u>
Maint	NL	Kahe 1	513030	PIL262K01NENPIZZZZ501	O/S	485,870	0	(485,870)	-100%	2007 budget is by prime location, Hono, Waiau or Kahe, but much of the actual costs are recorded to specific site and generation units. Therefore, cost is not comparable at the codeblock level.
Maint	NL	Kahe	513030	PIL262KSTNENPIZZZZ201	Matl	5,814	420,000	414,186	7124%	2007 budget is by prime location, Hono, Waiau or Kahe, but much of the actual costs are recorded to specific site and generation units. Therefore, cost is not comparable at the codeblock level.
Maint	NL	Kahe	513030	PIL262KSTNENPIZZZZ501	O/S	39,858	385,000	345,142	866%	2007 budget is by prime location, Hono, Waiau or Kahe, but much of the actual costs are recorded to specific site and generation units. Therefore, cost is not comparable at the codeblock level.
Maint	NL	P0000456 - Kahe Sludge Bed Remov	511030	PIL263KWWNEP0000456505	O/S	0	1,159,998	1,159,998	--	Represent the removal of the existing Kahe sludge with the disposal of the material at the landfill.
Maint	NL	P0000458 - Kahe Pond 1A Clean & Li	511030	PIL263KWWNEP0000458505	O/S	0	280,000	280,000	--	Represent the removal of silt from Kahe Pond 1A that spans 3 years. Majority of the cost is for the disposal of the silt at the landfill.
Maint	NL	P0001271 - Power Supply O&M Progr	511030	PIL265KSTNEP0001271501	O/S	0	800,000	800,000	--	2007 budgeted in P0001271, Power Supply O&M Program. P0001271 was created in 2007 to capture project cost exceeding \$100,000 each. Cost is not comparable at the codeblock level.
Maint	NL	P0000458 - Kahe Pond 1A Clean & Li	511030	PIL265KWWNEP0000458501	O/S	350,960	0	(350,960)	-100%	Represent the removal of silt from Kahe Pond 1A that spans 3 years. Majority of the cost is for the disposal of the silt at the landfill.
Maint	NL	Kahe	512030	PIL269KTFNENPIZZZZ501	O/S	404,366	50,000	(354,366)	-88%	In 2007 more Fuel Feed System maintenance work was forecast at the Honolulu/Iwilei site and less at Kahe. Cost is not comparable at the codeblock level.
Maint	NL	P0001269 - Kahe Fuel Tank 11 Clean	512030	PIL269KTFNEP0001269501	O/S	0	450,000	450,000	--	Estimated repair cost to allow continued reliable service in compliance with API653 standards.
Maint	NL	Hono	512010	PIN258HSTNENPIZZZZ501	O/S	0	288,000	288,000	--	2007 budget is by prime location, Hono, Waiau or Kahe, but much of the actual costs are recorded to specific site and generation units. Therefore, cost is not comparable at the codeblock level.

**HAWAIIAN ELECTRIC COMPANY, INC.
2007 TEST YEAR - PRODUCTION VARIANCES 2005 VS. 2007**

<u>Ops/</u> <u>Maint</u>	<u>Lab/</u> <u>NL</u>	<u>Projects</u>	<u>NARUC</u>	<u>Code</u>	<u>Type</u>	<u>2005</u>	<u>2007</u>	<u>Inc/(Dec)</u>	<u>%Inc</u> <u>/Dec</u>	<u>Comments</u>
Maint	NL	Hono	512010	PIN270HSTNENPIZZZZ501	O/S	310,201	0	(310,201)	-100%	2007 budgeted in program P0001271. P0001271 was created in 2007 to capture project cost exceeding \$100,000 each. Cost is not comparable at the codeblock level.
Maint	NL	P0001271 - Power Supply O&M Progr	512010	PIN270ITFNEP0001271501	O/S	0	420,000	420,000	--	2007 budgeted in P0001271, Power Supply O&M Program. P0001271 was created in 2007 to capture project cost exceeding \$100,000 each. Cost is not comparable at the codeblock level.
Maint	NL	P0000650 - Kahe 2 Overhaul	512030	PIT257K02NEP0000650201	Matl	347,442	0	(347,442)	-100%	Overhaul performed in 2005. No overhaul scheduled for this unit in 2007. Cost is not comparable from 2005 to 2007.
Maint	NL	P0000650 - Kahe 2 Overhaul	512030	PIT257K02NEP0000650501	O/S	367,859	0	(367,859)	-100%	Overhaul performed in 2005. No overhaul scheduled for this unit in 2007. Cost is not comparable from 2005 to 2007.
Maint	NL	P0000844 - Kahe 6 Overhaul	512030	PIT257K06NEP0000844201	Matl	298,182	0	(298,182)	-100%	Overhaul performed in 2005. No overhaul scheduled for this unit in 2007. Cost is not comparable from 2005 to 2007.
Maint	NL	P0000844 - Kahe 6 Overhaul	512030	PIT257K06NEP0000844501	O/S	243,706	0	(243,706)	-100%	Overhaul performed in 2005. No overhaul scheduled for this unit in 2007. Cost is not comparable from 2005 to 2007.
Maint	NL	P0001279 - Waiau 5 Overhaul	512020	PIT257W05NEP0001279201	Matl	0	209,500	209,500	--	Overhaul scheduled in 2007. No overhaul scheduled in 2005 for this unit. Cost is not comparable from 2005 to 2007.
Maint	NL	P0000846 - Kahe 1 Overhaul	512030	PIT258K01NEP0000846501	O/S	0	201,750	201,750	--	Overhaul scheduled in 2007. No overhaul scheduled in 2005 for this unit. Cost is not comparable from 2005 to 2007.
Maint	NL	P0000650 - Kahe 2 Overhaul	512030	PIT258K02NEP0000650501	O/S	310,740	0	(310,740)	-100%	Overhaul performed in 2005. No overhaul scheduled for this unit in 2007. Cost is not comparable from 2005 to 2007.
Maint	NL	P0001105 - Kahe 3 Overhaul	512030	PIT258K03NEP0001105201	Matl	0	290,000	290,000	--	Overhaul scheduled in 2007. No overhaul scheduled in 2005 for this unit. Cost is not comparable from 2005 to 2007.

**HAWAIIAN ELECTRIC COMPANY, INC.
2007 TEST YEAR - PRODUCTION VARIANCES 2005 VS. 2007**

<u>Ops/</u> <u>Maint</u>	<u>Lab/</u> <u>NL</u>	<u>Projects</u>	<u>NARUC</u>	<u>Code</u>	<u>Type</u>	<u>2005</u>	<u>2007</u>	<u>Inc/(Dec)</u>	<u>%Inc</u> <u>/Dec</u>	<u>Comments</u>
Maint	NL	P0001106 - Waiau 7 Overhaul	512020	PIT258W07NEP0001106201	Matl	0	364,000	364,000	--	Overhaul scheduled in 2007. No overhaul scheduled in 2005 for this unit. Cost is not comparable from 2005 to 2007.
Maint	NL	P0001106 - Waiau 7 Overhaul	512020	PIT258W07NEP0001106501	O/S	0	369,000	369,000	--	Overhaul scheduled in 2007. No overhaul scheduled in 2005 for this unit. Cost is not comparable from 2005 to 2007.
Maint	NL	P0000650 - Kahe 2 Overhaul	512030	PIT259K02NEP0000650501	O/S	221,103	0	(221,103)	-100%	Overhaul performed in 2005. No overhaul scheduled for this unit in 2007. Cost is not comparable from 2005 to 2007.
Maint	NL	P0001105 - Kahe 3 Overhaul	512030	PIT259K03NEP0001105201	Matl	0	345,000	345,000	--	Overhaul scheduled in 2007. No overhaul scheduled in 2005 for this unit. Cost is not comparable from 2005 to 2007.
Maint	NL	P0000845 - Kahe 4 Overhaul	512030	PIT259K04NEP0000845201	Matl	251,766	0	(251,766)	-100%	Overhaul scheduled in 2005. No overhaul scheduled for this unit in 2007. Cost is not comparable from 2005 to 2007. Kahe 4 overhaul is projected for completion in 2006 with a total estimated cost of \$4,008k.
Maint	NL	P0001279 - Waiau 5 Overhaul	512020	PIT259W05NEP0001279201	Matl	0	281,000	281,000	--	Overhaul scheduled in 2007. No overhaul scheduled in 2005 for this unit. Cost is not comparable from 2005 to 2007.
Maint	NL	P0001106 - Waiau 7 Overhaul	512020	PIT259W07NEP0001106201	Matl	0	287,000	287,000	--	Overhaul scheduled in 2007. No overhaul scheduled in 2005 for this unit. Cost is not comparable from 2005 to 2007.
Maint	NL	P0000650 - Kahe 2 Overhaul	513030	PIT260K02NEP0000650501	O/S	493,461	0	(493,461)	-100%	Overhaul performed in 2005. No overhaul scheduled for this unit in 2007. Cost is not comparable from 2005 to 2007.
Maint	NL	P0000844 - Kahe 6 Overhaul	513030	PIT260K06NEP0000844501	O/S	253,042	0	(253,042)	-100%	Overhaul performed in 2005. No overhaul scheduled for this unit in 2007. Cost is not comparable from 2005 to 2007.
Maint	NL	P0000844 - Kahe 6 Overhaul	513030	PIT261K06NEP0000844501	O/S	248,583	0	(248,583)	-100%	Overhaul performed in 2005. No overhaul scheduled for this unit in 2007. Cost is not comparable from 2005 to 2007.

HAWAIIAN ELECTRIC COMPANY, INC.
2007 TEST YEAR - PRODUCTION VARIANCES 2005 VS. 2007

<u>Ops/</u> <u>Maint</u>	<u>Lab/</u> <u>NL</u>	<u>Projects</u>	<u>NARUC</u>	<u>Code</u>	<u>Type</u>	<u>2005</u>	<u>2007</u>	<u>Inc/(Dec)</u>	<u>%Inc</u> <u>/Dec</u>	<u>Comments</u>
Maint	NL	P0000654 - Waiau 6 Overhaul	513020	PIT261W06NEP0000654501	O/S	274,743	0	(274,743)	-100%	Overhaul performed in 2005. No overhaul scheduled for this unit in 2007. Cost is not comparable from 2005 to 2007.
Maint	NL	P0000650 - Kahe 2 Overhaul	513030	PIT262K02NEP0000650501	O/S	230,543	0	(230,543)	-100%	Major Inspection performed in 2005. No major inspection for this unit in 2007. Cost is not comparable from 2005 to 2007.
Maint	NL	P0000937 - Waiau 9 Major Inspection 553		PIT272W09NEP0000937201	Matl	381,502	0	(381,502)	-100%	Major Inspection performed in 2005. No major inspection for this unit in 2007. Cost is not comparable from 2005 to 2007.
Maint	NL	P0000937 - Waiau 9 Major Inspection 553		PIT272W09NEP0000937501	O/S	718,202	0	(718,202)	-100%	Major Inspection performed in 2005. No major inspection for this unit in 2007. Cost is not comparable from 2005 to 2007.
Maint	NL	P0000938 - Waiau 10 Major Inspection 553		PIT272W10NEP0000938201	Matl	268,837	0	(268,837)	-100%	Waiau 10 major inspection represent cost in 2005 and 2006. Estimated total cost is \$ 5,628k. No major inspection on this unit in 2007. Cost is not comparable from 2005 to 2007.
Maint	NL	P0000937 - Waiau 9 Major Inspection 553		PIT273W09NEP0000937201	Matl	323,626	0	(323,626)	-100%	Major Inspection performed in 2005. No major inspection in 2007 on this unit. Cost is not comparable from 2005 to 2007.
Maint	NL	P0000937 - Waiau 9 Major Inspection 553		PIT273W09NEP0000937501	O/S	1,439,811	0	(1,439,811)	-100%	Major Inspection performed in 2005. No major inspection in 2007 on this unit. Cost is not comparable from 2005 to 2007.
Maint	NL	P0000937 - Waiau 9 Major Inspection 553		PIT273W09NEP0000937501	O/S	318,404	0	(318,404)	-100%	Major Inspection performed in 2005. No major inspection in 2007 on this unit. Cost is not comparable from 2005 to 2007.
Maint	NL	P0000937 - Waiau 9 Major Inspection 553		PIT273W09NEP0000937900	FS	(1,615,896)	0	1,615,896	-100%	Insurance credit in 2005. No similar cost in 2007. Cost is not comparable from 2005 to 2007.
Maint	NL	Waiau	512020	PIX258WSTNENPIZZZZ501	O/S	8,495	360,000	351,505	4138%	2007 budget is by prime location, Hono, Waiau or Kahe, but much of the actual costs are recorded to specific site and generation units. Therefore, cost is not comparable at the codeblock level.

HAWAIIAN ELECTRIC COMPANY, INC.
2007 TEST YEAR - PRODUCTION VARIANCES 2005 VS. 2007

<u>Ops/</u> <u>Maint</u>	<u>Lab/</u> <u>NL</u>	<u>Projects</u>	<u>NARUC</u>	<u>Code</u>	<u>Type</u>	<u>2005</u>	<u>2007</u>	<u>Inc/(Dec)</u>	<u>%Inc</u> <u>/Dec</u>	<u>Comments</u>
Maint	NL	P0001308 - Smart Signal	512020	PIX258WSTNEP0001308462	Softw	0	448,642	448,642	--	Smart Signal expense to be normalized by \$598,000 per HECO T-6. 50% or \$299,000 to Waiau, 50% or \$299,000 to Kahe. 2007 expense will be \$149,642.
Maint	NL	P0001162 - Waiau 61 Blr Feed Volute	512020	PIX259W06NEP0001162201	Matl	304,121	0	(304,121)	-100%	Total project cost was \$338k for the installation of Waiau 61 refurbished boiler feed pump volute. Cost is not comparable to 2007.
Maint	NL	Waiau 8	512020	PIX259W08NENPIZZZZZ201	Matl	324,628	0	(324,628)	-100%	Unforecast outage work on W8. Cost is not comparable to 2007.
Maint	NL	Waiau 8	512020	PIX259W08NENPIZZZZZ501	O/S	246,325	0	(246,325)	-100%	Unforecast outage work on W8. Cost is not comparable to 2007.
Maint	NL	P0001271 - Power Supply O&M Progr	513020	PIX260WSTNEP0001271201	Matl	0	240,000	240,000	--	2007 budgeted in P0001271, Power Supply O&M Program. P0001271 was created in 2007 to capture project cost exceeding \$100,000 each. Cost is not comparable at the codeblock level.
Maint	NL	Waiau 8	513020	PIX262W08NENPIZZZZZ201	Matl	286,411	0	(286,411)	-100%	Unforecast outage work on W8. Cost is not comparable to 2007.
Maint	NL	Waiau 8	513020	PIX262W08NENPIZZZZZ501	O/S	353,537	0	(353,537)	-100%	Unforecast outage work on W8. Cost is not comparable to 2007.
Maint	NL	Waiau 8	513020	PIX262W08NENPIZZZZZ900	O/S	(539,248)	0	539,248	-100%	Represent credit to O&M expense for W8 catastrophic failure. Cost being recorded as insurance expense as Company moves forward in processing insurance claim.
Maint	NL	Waiau	511020	PIX265WSTNENPIZZZZZ501	O/S	574,589	234,800	(339,789)	-59%	2007 budgeted in program P0001271. P0001271 was created in 2007 to capture project cost exceeding \$100,000 each. Cost is not comparable at the codeblock level.
Maint	NL	P0001271 - Power Supply O&M Progr	511020	PIX265WSTNEP0001271501	O/S	0	350,000	350,000	--	2007 budgeted in P0001271, Power Supply O&M Program. P0001271 was created in 2007 to capture project cost exceeding \$100,000 each. Cost is not comparable at the codeblock level.

Hawaiian Electric Company
2007 Test Year

PRODUCTION INVENTORY REPORT

MONTH END	ENDING INVENTORY \$	ISSUES \$	RECEIPTS \$	TURN RATIO
Oct-04	5,633,904	303,067	476,714	0.77
Nov-04	5,428,116	611,643	399,320	0.82
Dec-04	5,488,941	311,371	236,574	0.74
Jan-05	5,368,458	525,893	410,871	0.79
Feb-05	5,500,942	211,334	336,121	0.76
Mar-05	5,777,903	290,218	562,422	0.79
Apr-05	5,803,355	383,291	402,026	0.80
May-05	5,788,738	365,814	355,183	0.83
Jun-05	6,238,661	278,462	539,297	0.81
Jul-05	6,324,606	440,942	521,590	0.77
Aug-05	6,385,331	292,845	338,694	0.74
Sep-05	6,060,887	709,816	379,953	0.81
Oct-05	6,111,289	342,794	376,598	0.81
Nov-05	6,090,134	439,850	416,272	0.78
Dec-05	6,165,365	201,765	273,787	0.75
Jan-06	6,162,327	339,749	326,058	0.71
Feb-06	6,327,720	197,356	372,266	0.70
Mar-06	6,224,005	414,054	319,167	0.72
Apr-06	6,133,992	371,960	326,793	0.71
May-06	6,115,017	517,105	505,595	0.73
Jun-06	6,108,924	450,663	460,748	0.76
Jul-06	6,208,815	389,466	471,464	0.76
Aug-06	6,474,635	407,550	501,806	0.77
Sep-06	6,342,410	502,924	377,191	0.74
Oct-06	6,355,119	381,270	393,979	0.74
Nov-06	6,367,828	381,270	393,979	0.73
Dec-06	6,380,537	381,270	393,979	0.76
12-MO AVG	6,266,777	381,270	393,979	0.74

Rolling
Cumulative
Twelve
Month
Issues
Total

Rolling
Average
Twelve
Month
Ending
Inventory
Total

4,764,423	5,856,436
4,592,630	5,911,604
4,483,024	5,967,972
4,296,880	6,034,128
4,282,902	6,103,026
4,406,738	6,140,202
4,395,407	6,167,755
4,546,698	6,194,945
4,718,899	6,184,133
4,667,423	6,174,484
4,782,128	6,181,926
4,575,236	6,205,386
4,613,712	6,225,705
4,555,131	6,248,846
4,734,636	6,266,777

= Forecast

2006 Total

4,734,636

4,843,024

Inventory Calculations

1 Calculate 2006 year end value

Inventory value as of Sept 30,2006	\$	6,342,410	
+ projected receipts (OCT-DEC)	\$	1,181,936	(1.1)
- projected issues (OCT-DEC)	\$	1,143,809	(1.2)
2006 year-end inventory value =	\$	6,380,537	

1.1 projected receipts = 3 X prior 12 mth avg

12 month ave receipts	\$	393,979
3 X 12 mo ave	\$	1,181,936

1.2 projected issues = 3 X prior 12 mth avg

12 mo ave issues	\$	381,270
3 X 12 mo ave issues	\$	1,143,809

2 2006 year-end calculated value becomes 2007 TY starting inventory value.

3 2007 projected issues are calculated at an increase of 12.2% from 2006, which is equal to the average increase in issues for the previous 5 years.

2006 Issues	\$	4,734,636
average increase in issues		12.2%
2007 projected issues	\$	5,311,284

4 Receipts to 2007 are expected to 9.5% more than issues during this same period, which is the average from 2001-2005.

2007 Issues	\$	5,311,284
average increase in receipts		9.5%
2007 Projected Receipts	\$	5,816,889

5 2007 TY Production Materials Inventory calculations:

2006 projected year-end value	\$	6,380,537
+ projected receipts	\$	5,816,889
- projected issues	\$	5,311,284
projected 2007 TY year-end value	\$	6,886,142

6 The average inventory value based on a projected turns ratio of 0.76.

2007 total issues	\$	5,311,284
2007 Total Issues/0.76	\$	6,988,532

(0.76 was used based on review of recent trend in turn ratio.)

Hawaii Electric Company, Inc.

Beginning of Year 2007 Inventory Balance 6,380,537
+ Additions to Inventory 5,816,889
- Deductions to Inventory 5,311,284
End of Year 2007 Inventory Balance 6,886,142

POWER SUPPLY MATERIAL INVENTORY
(\$)

	<u>RECORDED</u>										<u>FCST</u>	<u>TEST YR.</u>		
	<u>2001</u>	delta %	<u>2002</u>	delta %	<u>2003</u>	delta %	<u>2004</u>	delta %	<u>2005</u>	delta %	<u>2006</u>	delta %	<u>2007</u>	2001-2005 avg delta
Year-End Value	4,010,686	10.7%	4,439,987	8.1%	4,797,614	14.4%	5,488,941	12.3%	6,165,365	3.5%	6,380,537	7.9%	6,886,142	11.4%
Average	4,067,891	8.1%	4,395,752	11.5%	4,899,829	8.9%	5,336,052	11.8%	5,967,972	-100.0%	0	#DIV/0!	6,988,532	10.1%
Total Issues	2,849,373	18.7%	3,383,328	14.3%	3,868,416	1.8%	3,937,500	13.9%	4,483,024	5.6%	4,734,636	12.2%	5,311,284	12.2%
Receipts	2,876,442	34.0%	3,853,860	10.0%	4,238,256	5.5%	4,472,700	9.8%	4,912,812	-1.4%	4,843,024	20.1%	5,816,889	14.8%
Receipts-Issues	27,069		470,532		369,840		535,200		429,788		108,388		505,605	
% delta	0.9%		13.9%		9.6%		13.6%		9.6%		2.3%		9.5%	9.5%

HAWAIIAN ELECTRIC COMPANY, INC.
DESCRIPTION OF TRANSMISSION-OPERATION EXPENSES

NARUC Account Number	DESCRIPTION
560	Transmission Operation Supervision and Engineering. Includes the costs of supervision and direction of the transmission system.
561	Load Dispatching. Includes the cost of labor, materials used and expenses incurred in load dispatching operations pertaining to the transmission of electricity. Some examples are: <ul style="list-style-type: none">a. Directing and switching.b. Arranging and controlling clearances for construction, maintenance, test and emergency purposes.c. Controlling system voltages.d. Obtaining reports on the weather and special events.e. Preparing operating and data reports.
562	Transmission Operations Station Expense. Includes the costs of operating transmission substations and switching stations, including stations located in or adjacent to a generating station. Costs include the inspection, testing and adjusting of station equipment such as transformers, regulators, switchgear, circuit breakers, batteries and chargers, meters and relays, wood and steel structures and station fences; operating switching equipment, telephone service, water bills, care of ground such as weeding, watering, cutting grass and fertilizing. Also includes the cost of inspecting, testing and adjusting the equipment used for load dispatching such as the operating computer and its related communications equipment.
563	Overhead Line Expenses. Includes the costs of operating overhead transmission lines. Some examples are: <ul style="list-style-type: none">a. Inspecting and testing of lightning arrestors, circuit breakers, switches and grounds outside substations.b. Load tests of circuits.c. Routine voltage surveys.d. Routine line inspection, termite prevention treatment and pole tests for rotten poles or termites.e. Switching overhead lines for operating purposes.

HAWAIIAN ELECTRIC COMPANY, INC.
DESCRIPTION OF TRANSMISSION-OPERATION EXPENSES

NARUC
Account
Number

DESCRIPTION

564 Underground Line Expense.

Includes the costs of operating underground transmission lines. Some examples:

- a. Inspecting and testing of gas and oil transmission cables, potheads, splices and ground wires.
- b. Routing inspection and cleaning of manholes, conduit, network and transformer vaults.
- c. Routine voltage surveys.
- d. Electrolysis surveys.
- e. Regulation and addition of oil and gas in high-voltage cable systems.
- f. Termite control.

565 Transmission of Electricity by Others.

Includes amounts payable to others for the transmission of the utility's electricity over transmission facilities owned by others.

566 Miscellaneous Transmission Expenses (Summary Account)

Includes the costs of transmission map and record work, transmission office expenses and other transmission expenses not provided for elsewhere. Some examples are:

- a. Mobile Radio expense. Includes the costs of operating the mobile radio system and its equipment.
- b. Microwave System expense. Includes the costs of operating the microwave system and its equipment.
- c. Other Transmission expense. Includes those transmission system operation expenses not provided for in other accounts such as:
Preparing general records of transmission lines and stations; ground resistance records; joint pole maps and records; and transmission maps and prints;
general clerical and secretarial work other than secretarial work for supervision and engineering personnel; miscellaneous labor.

567 Rents.

Includes the costs of renting property used by the transmission system.

HAWAIIAN ELECTRIC COMPANY, INC.
DESCRIPTION OF TRANSMISSION-MAINTENANCE EXPENSES

NARUC Account Number	DESCRIPTION
568	Maintenance Supervision and Engineering. Includes the costs of general supervision and direction of the maintenance of the transmission system. Excludes charges for the direct supervision and general clerical work which can be identified with a more appropriate account.
569	Maintenance of Substation Structures. Includes the costs of maintaining transmission substation structures and improvements. Some examples are: <ul style="list-style-type: none">a. Repairing and repainting stations, buildings, fences and gates.b. Repairing sprinkler systems, ventilating equipment and controls.c. Replacing and repairing floodlights and station signs.d. Replacing lawns, shrubs and trees.e. Repairing sidewalks, curbs and roadways within station property.
570	Maintenance of Station Equipment (Summary Account). Includes the costs of maintaining transmission station equipment. Maintenance of Substation equipment. Some examples are: <ul style="list-style-type: none">a. Repairing transformers and regulators.b. Repairing line taps, capacitor couplers and transmitter cabinets.c. Repairing switchgear and circuit breakers.d. Repairing switchboards, meters, relays, control wiring, etc.e. Repairing ground mats and fence grounds.f. Repairing bus compartments, bus runs and supportsg. Repairing conduit.h. Repairing batteries and chargers.i. Testing before and after maintenance or repair of electrical equipment.j. Oil samples after preventative maintenance.
571	Maintenance of Overhead Lines (Summary Account). Includes the cost of maintaining transmission overhead lines. <u>Maintenance of Towers and Fixtures</u> <ul style="list-style-type: none">a. Repainting towers.b. Moving line or tower in relocation of the same tower or section of line.c. Realigning and straightening towers and fixtures on towers.d. Relocating fixtures or towers.e. Repairing tower signs, stencils, tags, etc.f. Replacing parts of towers.

HAWAIIAN ELECTRIC COMPANY, INC.
DESCRIPTION OF TRANSMISSION-MAINTENANCE EXPENSES

NARUC
Account
Number

DESCRIPTION

Maintenance of Poles and Fixtures.

Includes the costs of maintaining transmission poles and fixtures. Some examples are:

- a. Replacing or removing additional clamps or strain insulators on guys in place.
- b. Moving line or guy pole while relocating the same pole or section of line.
- c. Painting poles, crossarms or pole extensions.
- d. Readjusting and changing position of guys or braces.
- e. Realigning and straightening poles, crossarm braces and other pole fixtures.
- f. Relocating crossarms, racks, brackets and other pole fixtures.
- g. Repairing or realigning pins, racks or brackets.
- h. Repairing pole-supported platform
- i. Shaving, cutting rot or treating poles or crossarms in use or salvaged for reuse.
- j. Stubbing poles already in service.
- k. Supporting fixtures and conductors and transferring them to new poles during pole replacements.
- l. Repairing of pole signs, stencils, tags, etc.

Maintenance of Overhead Conductors and Devices.

Includes the costs of maintaining transmission overhead conductors and devices. Some examples are:

- a. Overhauling and repairing line cutouts, line switches, line breakers, etc.
- b. Washing and/or silconing insulators and bushings.
- c. Re-fusing cutouts.
- d. Repairing line oil circuit breakers, associated relays and control wiring.
- e. Repairing grounds.
- f. Resagging, retying or rearranging position or spacing of conductors as a permanent repair.
- g. Sampling, testing, changing, purifying and replenishing insulating oil.
- h. Standing by phones, going to calls, cutting faulty lines clear, or similar activities during emergencies.
- i. Transferring loads, switching and reconnecting circuits and equipment for maintenance.

Maintenance of Roads and Trails.

Includes the costs of maintaining roads and trails. Some examples are:

- a. Repairing roads, trails, bridges, etc.
- b. Trimming trees and clearing brush to maintain roadway clearances.

Maintenance of Overhead Lines - Tree Trimming.

Includes the costs of inspecting and maintaining transmission overhead line clearances.

HAWAIIAN ELECTRIC COMPANY, INC.
DESCRIPTION OF TRANSMISSION-MAINTENANCE EXPENSES

NARUC
Account
Number

DESCRIPTION

Maintenance of Overhead Lines - Storm Damage.

Includes the costs of restoring the transmission system damaged by the storm.

572

Maintenance of Underground Lines (Summary Account).

Includes the costs of maintaining the transmission underground lines.

Maintenance of Underground Conduit.

Includes the costs of maintaining the underground conduits. Some examples are:

- a. Cleaning ducts, manholes and sewer connections.
- b. Minor alterations of handholes, manholes or vaults.
- c. Refastening, repairing or moving of racks, ladders or hangers in manholes or vaults.
- d. Painting, plugging and shelving ducts.
- e. Replacing covers and frames; changing grades.

Maintenance of Underground Conductors and Devices.

- a. Repairing oil circuit breakers, switches, cutouts and control wiring.
- b. Repairing grounds, conductors and splices.
- c. Retraining, reconnecting or transferring cables.
- d. Repairing or moving junction boxes and potheads.
- e. Refireproofing of cables and repairing supports.
- f. Repairing electrolysis preventative devices for cables.
- g. Sampling, testing, changing, purifying and replenishing insulating oil.
- h. Transferring loads; switching and reconnecting circuits and equipment for maintenance.
- i. Repairs to oil or gas equipment in high-voltage cable system.

573

Maintenance of Miscellaneous Transmission Plant (Summary Account).

Includes the miscellaneous costs of maintaining owned or leased plant which is assigned to transmission operations.

Maintenance of Mobile Radio Equipment.

Includes the costs of maintaining the mobile radio equipment.

Maintenance of Microwave Equipment.

Includes the costs of maintaining the microwave equipment.

HAWAIIAN ELECTRIC COMPANY, INC.
DISTRIBUTION-OPERATION EXPENSES

NARUC Account Number	DESCRIPTION
580	Operation Supervision and Engineering. Includes the costs of general supervision and direction of the operation of the distribution system. Excludes charges for the direct supervision and general clerical work which can be identified with a more appropriate account.
581	Load Dispatching. Includes cost of labor, materials used and expenses incurred in load dispatching operations pertaining to the distribution of electricity. Some examples are: <ul style="list-style-type: none">a. Directing switching.b. Arranging and controlling clearances for construction, maintenance, test and emergency purposes.c. Controlling system voltages.d. Preparing operating reports.e. Obtaining reports on the weather and special events.
582	Station Expenses (Summary Account). Includes the costs of operating distribution substations. Some examples are: <u>Substation Operation.</u> <ul style="list-style-type: none">a. Inspecting, testing and adjusting transformers, regulators, switchgear, circuit breakers, batteries and chargers, meters and station fences.b. Operating switching equipment.c. Changing station transformer taps.d. Telephone service. <u>Substation Groundskeeping.</u> Includes the costs for the care and maintenance of substation grounds. examples are: <ul style="list-style-type: none">a. Sweeping, mopping and tidying station.b. Care of grounds, such as weeding, watering, cutting grass, fertilizing.c. Water bills.

HAWAIIAN ELECTRIC COMPANY, INC.
DISTRIBUTION-OPERATION EXPENSES

NARUC
Account
Number

DESCRIPTION

583

Overhead Line Expense (Summary Account).

Includes the costs of operating the overhead distribution lines.

Overhead Line Operation.

Includes the costs of operating overhead distribution lines. Some examples are:

- a. Inspecting and testing lightning arrestors, circuit breakers, switches and grounds outside substations.
- b. Changing line transformer taps.
- c. Load tests and voltage surveys of feeders and circuits.
- d. Routing line inspection, termite prevention treatment and pole tests for rotten poles or termites.
- e. Switching overhead lines for operating purposes.

Removing and Resetting Overhead Line Transformers.

Includes the costs of relocating distribution overhead line transformers. Some examples are:

- a. Inspecting, testing, removing, resetting and changing line transformers or voltage regulators with or without changing capacity.
- b. Load tests and voltage surveys of line transformers.

584

Underground Line Expenses (Summary Account).

Includes the costs of operating the underground distribution system.

Underground Line Operation.

Includes the costs of operating the underground distribution lines. Some examples:

- a. Inspecting and testing gas and oil distribution cables, potheads, splices and ground wires.
- b. Routine inspection and cleaning of manholes, conduit, network and transformer vaults.
- c. Routing voltage surveys.
- d. Electrolysis surveys.
- e. Regulation and addition of oil or gas in high-voltage cables systems.
- f. Termite control.

Removing and Resetting Underground Line Transformers.

Includes the costs of relocating distribution underground line transformers. Some examples are:

- a. Inspecting, testing, removing, resetting and changing underground line transformers, network transformers and protectors with or without changing capacity.
- b. Load tests and voltage surveys of underground line transformers.

HAWAIIAN ELECTRIC COMPANY, INC.
DISTRIBUTION-OPERATION EXPENSES

NARUC
Account
Number

DESCRIPTION

585

Street Lighting and Signal System Expenses.

Includes the cost of labor, materials used and expenses incurred in: 1) the operation of

street lighting and signal system plant which is owned or leased by the utility; and 2) the operation and maintenance of such plant owned by customers where such work is done regularly as a part of the street lighting and signal system service. Some examples are:

- a. Supervising street lighting and signal systems operation.
- b. Replacing lamps and incidental cleaning of glassware and fixtures in connection herewith.
- c. Routing patrolling for lamp outages, extraneous nuisances or encroachments, etc.
- d. Testing lines and equipment including voltage and current measurement.
- e. Winding and inspection of time switch and other controls.

586

Meter Expenses (Summary Account).

Includes the costs of operating distribution meters and associated equipment.

Customer Meters.

Includes the cost of operating customer meters and associated equipment.

Some examples:

- a. Clerical work on meter history and associated record cards, test cards and reports.
- b. Connecting, disconnecting and resetting meters.
- c. Meter locks and unlocks.
- d. Routine testing, inspecting and cleaning of meters.

Excludes charges for the first setting and testing of meters which should be charged to account 370, Meters. Cost of removing meters due to discontinuance of service should be charged to jobs referencing account 108.11.

Other Distribution Meters.

Includes the cost of operating distribution meters and associated equipment for other than customer billing purposes. Some examples are:

- a. Installation of recorders and meters used to obtain survey data.
- b. Changing of recorder data cartridges.
- c. Translation of recorder data cartridges.
- d. Clerical work on recorder history and location files.
- e. Routine testing of survey recorders, meters and data cartridges.

Excludes charges on meters installed permanently in transmission or distribution substations and generation stations which are station equipment and are charged to the respective equipment accounts.

HAWAIIAN ELECTRIC COMPANY, INC.
DISTRIBUTION-OPERATION EXPENSES

NARUC
Account
Number

DESCRIPTION

587

Customer Installation Expenses.

Includes the costs of inspecting and servicing customers' installations. Some examples:

- a. Installing, removing, renewing and changing lamps and fuses.
- b. Testing, adjusting and repairing customers' fixtures and appliances.
- c. Investigating, locating and clearing grounds on customers' wiring.
- d. Replacing, connecting, removing or installing leased property on customers' premises.
- e. Cost of changing customers' equipment due to changes in service characteristics.
- f. Investigation of current diversion.
- g. Radio, television and similar interference work; erecting new aerials on customers' premises; patrolling lines, testing lightning arrestors, inspecting pole hardware and equipment to locate cause of interference.
- h. Investigating service complaints, including load test of motors and lighting power circuits on customers' premises; field investigations of complaints on bills or of voltage.
- i. Relocation of weather head, service entrance cable, installation of mast and guying and other adjustments to a customer's service facilities.

588

Miscellaneous Distribution Expenses (Summary Account).

Includes the miscellaneous costs of operating the distribution system.

General records.

Physical characteristics of lines and substations, ground resistance, system voltage and loads; operating records covering poles, transformers, manholes, cables and other distribution facilities not provided for elsewhere.

Joint Pole Maps and Records.

Preparing Other Maps and Prints.

Service Interruption and Trouble Records.

General Clerical.

Stenographic and office supplies not provided for elsewhere. Excludes clerical work chargeable to account 586, Meter Expenses.

HAWAIIAN ELECTRIC COMPANY, INC.
DISTRIBUTION-OPERATION EXPENSES

NARUC Account Number	DESCRIPTION
	<u>Communications Services.</u>
	<u>Janitorial Services.</u> Distribution office and storeroom structures.
	<u>Building Services.</u> Distribution office and storeroom structures.
	<u>Other Distribution.</u> Expense not provided for elsewhere.
	<u>Security Guards.</u>
589	Rents. Includes the rental of property utilized by the distribution system.

HAWAIIAN ELECTRIC COMPANY, INC.
DISTRIBUTION-MAINTENANCE EXPENSES

NARUC
Account
Number

DESCRIPTION

590

Maintenance Supervision and Engineering.

Includes the costs of general supervision and direction of the maintenance of the distribution system. Excludes charges for the direct supervision and general clerical work which can be identified with a more appropriate account.

591

Maintenance of Structures (Summary Account).

Includes the costs of maintaining distribution structures and improvements.

Maintenance of Substation Structures.

- a. Repairing and repainting station buildings, fences and gates.
- b. Repairing sprinkler systems, ventilating equipment and controls.
- c. Replacing and repairing floodlights and station signs.
- d. Replacing lawns, shrubs and trees.
- e. Repairing sidewalks, curbs and roadways within station property.

Maintenance of Distribution Office and Storeroom Structures.

Includes the costs of maintaining the distribution office and storeroom structures. Some examples are:

- a. Repairing and repainting office and storeroom buildings, fences and gates.
- b. Repairing sidewalks, curbs and walls within company property.
- c. Repairing sprinkler, water and sewer systems.
- d. Repairing gas tanks, pumps, ventilating equipment and controls.
- e. Replacing lawns, shrubs and trees.

592

Maintenance of Substation Equipment.

Includes the costs of maintaining the distribution substation plant. Some examples are:

Maintenance of Poles, Towers and Fixtures.

- a. Replacing or removing additional clamps or strain insulators on guys in place.
- b. Moving line or guy pole while relocating the same pole or section of line.
- c. Painting poles, towers, crossarms or pole extensions.
- d. Readjusting and changing position of guys and braces.
- e. Realigning and straightening poles, crossarm braces and other pole fixtures.
- f. Relocating crossarms, racks, brackets and other pole fixtures.
- g. Repairing or realigning pins, racks or brackets.
- k. Supporting fixtures and conductors and transferring them to new poles during pole replacements.
- l. Repairing pole signs, stencils, tags, etc.

HAWAIIAN ELECTRIC COMPANY, INC.
DISTRIBUTION-MAINTENANCE EXPENSES

NARUC Account Number	DESCRIPTION
593	<p>Maintenance of Overhead Conductors and Devices. Includes the costs of maintaining distribution overhead conductors and devices. Some examples are:</p> <p><u>Maintenance of Poles, Towers and Fixtures.</u> Includes the costs of maintaining distribution poles, towers and fixtures.</p> <ol style="list-style-type: none">Replacing or removing additional clamps or strain insulators on guys in place.Moving line or guy pole while relocating the same pole or section of line.Painting poles, towers, crossarms or pole extensions.Readjusting and changing position of guys and braces.Realigning and straightening poles, crossarm braces and other pole fixtures.Relocating crossarms racks, brackets and other pole fixtures.Repairing or realigning pins, racks or brackets.Repairing pole-supported platforms.Shaving, cutting rot or treating poles or crossarms in use or salvaged for reuse.Stubbing poles already in service.Supporting fixtures and conductors and transferring them to new poles during pole replacements.Repairing pole signs, stencils, tags, etc. <p><u>Maintenance of Overhead Conductors and Devices.</u> Includes the costs of maintaining distribution overhead conductors and devices. Some examples are:</p> <ol style="list-style-type: none">Overhauling and repairing line cutouts, line switches, line breakers, etc.Washing and/or siliconing insulators and bushings.Re-fusing cutouts.Repairing line oil circuit breakers, associated relays and control wiring.Repairing grounds.Resagging, retying or rearranging position or spacing of conductors as a permanent repair.Sampling, testing changing, purifying and replenishing insulating oil.Standing by phones, going to calls, cutting faulty lines clear, or similar activities during emergencies.Transferring loads, switching and reconnecting circuits and equipment for maintenance.

HAWAIIAN ELECTRIC COMPANY, INC.
DISTRIBUTION-MAINTENANCE EXPENSES

NARUC
Account
Number

DESCRIPTION

Maintenance of Overhead Services.

Includes the costs of maintaining overhead services. Some examples are:

- a. Moving position of service, either on pole line or on customers' premises.
- b. Pulling slack and retying service wire.
- c. Refastening or tightening service bracket.
- d. Repairs to service lines up to weather head.

Maintenance of Overhead Services - Tree Trimming.

Includes the cost of maintaining distribution overhead line clearances; roads and trails. Some examples are:

- a. Trimming trees for line clearances.
- b. Repairing roads, trails, bridges, etc.
- c. Trimming trees and clearing brush to maintain roadway clearances.

Maintenance of Overhead Lines - Storm Damage.

Includes the costs of restoring the distribution system damaged by a storm.

594

Maintenance of Underground Lines (Summary Account).

Includes the costs of maintaining underground distribution line facilities.

Maintenance of Underground Conduit.

Includes the costs of maintaining the distribution underground conduit.

Some examples are:

- a. Cleaning ducts, manholes and sewer connections.
- b. Moving or changing position of conduit or pipe.
- c. Minor alterations of handholes, manholes or vaults.
- d. Refastening, repairing or moving of racks, ladders or hangers in manholes or vaults.
- e. Plugging and shelving ducts.
- f. Repairs to sewers, drains, walls, floors, rings and covers.

HAWAIIAN ELECTRIC COMPANY, INC.
DISTRIBUTION-MAINTENANCE EXPENSES

NARUC Account Number	DESCRIPTION
	<u>Maintenance of Underground Conductors and Devices.</u> Includes the cost of maintaining distribution underground conductors and devices. Some examples are: <ul style="list-style-type: none">a. Repairing circuit breakers, switches, cutouts, network protectors, associated relays and control wiring.b. Repairing grounds.c. Retraining, reconnecting or transferring cables in manholes.d. Repairing conductors and splicers.e. Repairing or moving junction boxes and potheads.f. Refireproofing cables and repairing supports.g. Repairing electrolysis preventative devices for cables.h. Sampling, testing, changing, purifying and replenishing insulating oil.i. Transferring loads; switching and reconnecting circuits and equipment for maintenance purposes.j. Repairing oil or gas in high-voltage cable system.
	<u>Maintenance of Underground Services.</u> Includes the cost of maintaining distribution underground conductors and devices. Some examples are: <ul style="list-style-type: none">a. Cleaning service ducts.b. Repairing underground wire.
595	Maintenance of Line Transformers. Includes the costs of maintaining distribution line transformers. Some examples are: <ul style="list-style-type: none">a. Repairing transformers and network protectors.b. Sampling, adding and renewing oil.c. Internal and external connections.d. Servicing throat switches.e. Replacing primary bushings in cable and switch compartments.f. Painting vaults.g. Testing and adjusting after maintenance.
596	Maintenance of Street Lighting and Signal Systems. Includes the cost of labor, materials used and expense incurred in maintenance of plant, the book cost of which is includable in account 373, Street Lighting and Signal Systems.

HAWAIIAN ELECTRIC COMPANY, INC.
DISTRIBUTION-MAINTENANCE EXPENSES

NARUC Account Number	DESCRIPTION
597	<p>Maintenance of Meters (Summary Account). Includes the costs of maintaining distribution meters and meter testing equipment.</p> <p><u>Maintenance of Customer Meters.</u> Includes the cost of maintaining customer meters and associated equipment. Some examples are:</p> <ol style="list-style-type: none">Repairing of primary meter installations.Repairing meter grounds.Repairing sockets, boxes and enclosures. <p><u>Maintenance of Other Distribution Meters.</u> Includes the cost of maintaining distribution meters and associated equipment for other than customer billing purposes. Some examples are:</p> <ol style="list-style-type: none">Repairing survey meters, recorders and data cartridges.Repairing translator and peripheral equipment. <p>Excludes charges on meters installed permanently in substations, transmission stations or generation stations. These meters are station equipment and are charged to the respective equipment accounts.</p>
598	<p>Maintenance of Distribution Office Furniture and Equipment. Includes the costs of maintaining the distribution office furniture and equipment.</p>

Hawaiian Electric Company, Inc.
2007 TEST YEAR

T&D O&M EXPENSE VARIANCES BY ACCOUNTS
(Over \$200,000 and 10%)

	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)
	<u>Account</u>	<u>RA</u>	<u>Activity*</u>	<u>Expense Element**</u>	<u>2005 Recorded***</u>	<u>2007 Test Year Estimate</u>	<u>Variance \$</u>	<u>%</u>	
	<u>Transmission Operations</u>								
1	561	PRE	376	501	148,750	556,646	407,896	274	A
2	563	PDA	328	501	549,985	-	(549,985)	(100)	B
3	563	PDS	328	150	268	323,048	322,780	120,440	B
	<u>Transmission Maintenance</u>								
4	571	PDA	342	501	251,054	-	(251,054)	(100)	C
5	571	PDV	355	501	346,773	750,000	403,227	116	D
	<u>Distribution Operations</u>								
6	582	PRA	463	901	-	257,814	257,814	----	E
7	583	PDS	458	150	2,032	229,070	227,038	11,173	F
8	584	PDS	459	150	536	343,299	342,763	63,948	G
9	588	PBP	407	506	203,677	-	(203,677)	(100)	H
10	588	PDF	600	150	444,901	731,174	286,273	64	I
11	588	PEZ	455	451	706,505	1,066,812	360,307	51	J

* Detailed activity descriptions can be found on pages 5-20 of this work paper, in the order in which they appear.

** Expense element descriptions can be found on page 21 of this work paper in the order in which they appear.

*** 2005 recorded expenses have not been adjusted to account for work incorrectly charged to capital in 1999-2004 that was expensed in 2005.

Note:

Hawaiian Electric Company, Inc.
2007 TEST YEAR

T&D O&M EXPENSE VARIANCES BY ACCOUNTS
(Over \$200,000 and 10%)

	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)
	Account	RA	Activity*	Expense Element**	2005 Recorded***	2007 Test Year Estimate	Variance \$	%	
	<u>Distribution Maintenance</u>								
1	592	PRS	487	201	47,846	260,000	212,154	443	K
2	593	PDP	471	905	-	(220,000)	(220,000)	---	L
3	593	PDS	475	150	12,481	218,239	205,758	1,649	M
4	593	PDS	475	150	14,810	848,427	833,617	5,629	M
5	593	PDS	475	505	-	370,373	370,373	---	O
6	593	PDV	494	501	1,502,719	2,258,000	755,281	50	N
7	594	PDA	478	505	392,998	-	(392,998)	(100)	O
8	594	PDL	478	150	202,147	-	(202,147)	(100)	P
9	594	PDS	478	150	23,183	848,348	825,165	3,559	P
10	594	PDU	478	150	635,835	-	(635,835)	(100)	P
11	594	PDU	478	505	276,475	-	(276,475)	(100)	O
12	598	PDA	492	201	246,540	-	(246,540)	(100)	Q
13	598	PDS	492	201	-	226,004	226,004	---	Q

* Detailed activity descriptions can be found on pages 5-20 of this work paper, in the order in which they appear.

** Expense element descriptions can be found on page 21 of this work paper in the order in which they appear.

*** 2005 recorded expenses have not been adjusted to account for work incorrectly charged to capital in 1999-2004 that was expensed in 2005.

Note:

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2007 TEST YEAR

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(Over \$200,000 and 10%)

A	407,896	Variance due to new EMS/OMS related 24/7 maintenance contracts for hardware, software and display boards technical support to take effect as warranty ends.
B	(549,985) 322,780	Variance is due to inspection work relating to Live-line maintenance that was contracted out during 2005. The inspection work is forecasted to be performed by internal labor during 2007.
C	(251,064)	Variance is due to Live-line maintenance work that was contracted during 2005. Similar work is not forecasted to be performed during 2007.
D	403,227	Variance is due to increase in Vegetation Management outside services forecasted to be performed during 2007. Due to increased rainfall in recent years, the routine maintenance cycle has been reduced from 15 months to 12 months.
E	257,814	Variance due to amortization of OMS implementation of software costs over a 12 year period beginning in 2007.
F	227,038	As the formal inspection plan was completed in 2004, implementation was incorporated in 2006 and is reflected in the 2007 forecast.
G	342,763	Variance is due to an increase in underground inspections to be performed during 2007. Inspections will be performed to enter information into a detailed inspection database and to incorporate infrared and VLF (very low frequency) testing of underground cables.
H	(203,677)	Vendor selection for Outage Management System (OMS) completed in 2005 and data cleanup performed in 2006. No further costs forecasted for 2007.
I	286,272	Variance due to an increase in staffing of Primary Troublemens (PTMs). During 2005, staffing ranged from 18-20 PTMs throughout the year. Current staffing is 25 PTM's compared to a 2007 forecast of 26 PTMs.
J	360,307	Variance due to ITS' nonlabor data management/systems' costs allocated to T&D. Refer to (Patsy Nanbu's) T-10 testimony for details of breakdown.

Hawaiian Electric Company, Inc.
2007 TEST YEAR

T&D O&M EXPENSE VARIANCES BY ACCOUNTS
(Over \$200,000 and 10%)

K	212,154	Variance due to increase in amount forecast for materials relating to substation distribution equipment for anticipated increase in corrective work.
L	(220,000)	Variance due to procedural reclassification from one Responsibility Area (RA) to another. Amount is forecasted into one RA (DP), but charges were previously recorded to another RA (DC).
M	205,758 833,617	Variance due to procedural reclassification from one Responsibility Area (RA) to another. Amounts are forecasted into one RA (DS), but charges are recorded to multiple RAs.
N	755,281	Variance is due to increase in Vegetation Management outside services forecasted to be performed during 2007. Due to increased rainfall in recent years, the routine maintenance cycle has been reduced from 15 months to 12 months.
O	370,373 (392,998) (276,475)	Variance due to procedural reclassification from one Responsibility Area (RA) to another. Amounts are forecasted into one RA (DS), but charges are recorded to multiple RAs.
P	(202,147) 825,164 (635,835)	Variance due to procedural reclassification from one Responsibility Area (RA) to another. Amounts are forecasted into one RA (DS), but charges are recorded to multiple RAs.
Q	(246,540) 226,004	Variance due to procedural reclassification from one Responsibility Area (RA) to another. Amounts are forecasted into one RA (DS), but charges are recorded to multiple RAs.

CODE BLOCK REFERENCE: ASM Activity Definitions

Process Group	TRANSMIT ELECTRICITY	Index:
Major Process	Operate & Maintain Transmission Facilities	
Business Process	Dispatch Power	Date: 12/08/97

Activity: Dispatch & Monitor Generation, Transmission SCADA Resources	Activity Code: 376
--	---------------------------

Activity Description: This activity includes all of the tasks associated with system operation transmission SCADA functions and generation control.

Major Work Performed: Schedule generation resources for daily, weekly, monthly load requirements Operate SCADA equipment to dispatch power Ensure software & hardware functions Collect data & display results Update economic data

See Related Activities:

CODE BLOCK REFERENCE: ABM Activity Definitions

Process Group	TRANSMIT ELECTRICITY	328
Major Process	Operate & Maintain Transmission Facilities	Index:
Business Process	Operate Transmission Facilities	Date: 12/08/97

Activity:	Perform Transmission Overhead Line Inspection - Preventive/Predictive	Activity Code: 328
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Activity Description:

This activity involves all tasks associated with inspecting overhead transmission and subtransmission lines and structures. It excludes any documentation regarding transmission substations which are covered under a separate activity. These are planned/scheduled inspections which are not related to emergency/failure investigation/inspections. (Transmission line: after the deadend structure in the generation switchyard up to the deadend structure entering the transmission substation; and after the deadend structure exiting the transmission substation up to the deadend structure entering the distribution substation).

Major Work Performed:

- Perform all planned inspections
- Perform fault recorder/indicator analysis
- Perform outage analysis
- Support system design
- Records maintenance & inspection
- Travel to/from location
- Inspect lines equipment risers terminators
- Perform electrical testing & monitoring

See Related Activities:

- 328 Compile & Update Transmission Maps & Prints

CODI BLOCK REFERENCE: ABW Activity Definitions

Process Group	TRANSMIT ELECTRICITY	Index:
Major Process	Operate & Maintain Transmission Facilities	
Business Process	Maintain Transmission Facilities	Date: 12/06/97

Activity: Maintain Transmission Overhead Line - Preventive **Activity Code:** 342

Activity Description:

Preventive maintenance is performed on time/frequency based cycles and/or needs identified by inspection. This activity involves all work associated with the planning, scheduling and execution of preventive maintenance on the overhead transmission and subtransmission line facilities. It involves work on equipment such as poles, lines, capacitors, switches, guy wires, cross-arms, conductors and insulators but excludes any meter work which is covered under a separate process. (Transmission line, after the deadend structure in the generation switchyard up to the deadend structure entering the transmission substation; and after the deadend structure exiting the transmission substation up to the deadend structure entering the distribution substation).

Major Work Performed:

- Perform preventive transmission & subtransmission line maintenance work
- Plan & schedule maintenance
- Maintain preventive maintenance records
- Perform corrosion control
- Travel to/from location
- Provide engineering & design support

See Related Activities:

- 341 Test, Treat & Restore Wooden Transmission Poles

CODE BLOCK REFERENCE: AEM Activity Definitions

Process Group	TRANSMIT ELECTRICITY	Index:
Major Process	Operate & Maintain Transmission Facilities	
Business Process	Maintain Transmission Facilities	Date: 12/08/97

Activity: Perform Vegetation Management - Transmission Activity Code: 355

Activity Description:

This activity includes all vegetation management efforts to maintain and clear the right-of-way for the transmission and subtransmission system. This includes coordinating efforts with subcontract tree trimming crews and the costs for contract work. These are maintenance and upkeeping efforts, not R/W work for new transmission facility construction.

Major Work Performed:

Manage vegetation
Prepare bid
Write contracts
Attend pre-bid meetings
Respond to damage complaints
Dispatch crews
Plan & schedule work
Perform ground restoration (erosion)
Trim trees
Perform field inspections & survey/compliance/evaluation
Remove trees
Spray Trees
Secure land owners permission
Analyze performance
Dispatch crew for emergency work/special requests
Clear trails & work area

See Related Activities:

CODE BLOCK REFERENCE: (PM Activity Definitions)

Process Group	DISTRIBUTE ELECTRICITY	Index:
Major Process	Operate & Maintain Distribution Facilities	
Business Process	Operate Distribution Facilities	Date: 12/08/97

Activity: Operate Distribution Facilities - Substation	Activity Code: 463
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Activity Description: This activity encompasses all tasks associated with the routine operation of the distribution substations including managing and monitoring load flows and performing routine switching.
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Major Work Performed: Perform switching Maintain voltage & current charts Monitor voltage & current levels Provide technical support Monitor alarms Perform fault analysis Prioritize and schedule resources
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See Related Activities:

CODE BLOCK REFERENCE: ABM Activity Definitions

Process Group	DISTRIBUTE ELECTRICITY	458 DSO Insp
Major Process	Operate & Maintain Distribution Facilities	Index:
Business Process	Operate Distribution Facilities	Date: 12/08/97

Activity: Perform Distribution Overhead Line Inspection - Predictive/Preventive	Activity Code: 458
--	--------------------

Activity Description:
This activity involves all tasks associated with inspecting overhead distribution lines (Distribution Line: After the deadend structure from the distribution substation to the secondary main). (These are planned/scheduled inspections which are not related to emergency failure investigation/inspection).

Major Work Performed:
Perform all inspection (including public safety inspection and line transformers)
Test line transformers
Fault recorder/indicator analysis
Perform outage analysis
Support system design
Records maintenance & inspection
Support mapping information systems
Travel to and from location
Install fault indicators
Fill out Repair Order

See Related Activities:
456 Compile & Update Distribution Maps & Prints

CODE BLOCK REFERENCE: ABM Activity Definitions

Process Group	DISTRIBUTE ELECTRICITY	Index:
Major Process	Operate & Maintain Distribution Facilities	
Business Process	Operate Distribution Facilities	Date: 12/08/87

Activity: Perform Distribution Underground Line Inspection - **Activity Code:** 459
Predictive/Preventive

Activity Description:

This activity involves all tasks associated with inspecting underground distribution lines. (Distribution Line: After the deadend structure from the distribution substation to the secondary main). (These are planned/scheduled inspections which are not related to emergency failure investigation/inspection).

Major Work Performed:

- Perform all inspection (including public safety inspection and line transformers)
- Test line transformers
- Perform manhole and handhold inspections
- Fault recorder/indicator analysis
- Perform outage analysis
- Support system design
- Records maintenance & inspection
- Support mapping information systems
- Travel to and from location
- Install fault indicators
- Fill out Repair Order

See Related Activities:

456 Compile & Update Distribution Maps & Prints

CODE BLOCK REFERENCE: LEM Activity Definitions

Process Group	DISTRIBUTE ELECTRICITY	Index:
Major Process	Plan, Engineer, Design & Construct Distribution & Customer Service System & Facilities	Date: 02/26/03
Business Process	Plan, Engineer & Design Distribution System & Facilities	

Activity: Engineer & Design Distribution SCADA System & Equipment **Activity Code:** 407

Activity Description:

This activity includes all tasks associated with performing planning and engineering studies that relate to the hardware and software requirements for the SCADA system and the associated facilities/equipment that support the distribution system and designing, and engineering distribution SCADA systems & structures. (Distribution: After the deadend structure from the distribution substation to the secondary main). It begins with project planning/scheduling and continues through engineering calculations, design, and internal and external customer coordination. It also includes work performed to provide service to a new customer or to upgrade an existing customer.

Major Work Performed:

Visit vendor sites	Prepare drawings
Write reports	Schedule and coordinate project
Develop & maintain specifications and standards	Close out jobs
Perform all legal tasks associated with this activity	Prepare as-builts
Perform engineering studies and evaluations	Obtain permits other than environmental or land use
Respond to survey	Obtain SCADA-related software licenses
Analyze status, analog, and control requirements	Provide field information and assistance to designer
Specify hardware and software requirements	Prepare equipment/construction specifications
Evaluate alternatives	Attend meetings
Engineering functions and calculations	Conduct factory acceptance testing
Design work	Compile and update prints/records
Perform economic/financial analysis	Evaluate records
Prepare construction cost estimates	Develop software
Prepare Bill of Materials	Configure hardware
Review/approve work orders	Develop database
Manage correspondence/paperwork	Provide data input/development/transfer
	Review/approve construction drawings

See Related Activities:

739 Prepare & Support PUC Capital Project Filings
841 Interview & Qualify New Suppliers/Contractors/Consultants
842 Order Materials, Equipment, Supplies & Services
843 Process Invoices and Other Payments
844 Prepare and Manage Contracts for Services & Materials

CODE BLOCK REFERENCE: *ABM Activity Definitions*

Process Group	PROVIDE CUSTOMER SERVICE	Index:
Major Process	Provide Customer Service - Regulated	
Business Process	Provide Customer Account Service - Regulated	Date: 12/08/97

Activity: Respond to Customer Inquiries & Service Requests Activity Code: 500

Activity Description:

This activity includes all efforts to respond to customer inquiries and service requests received through phone calls, letters, and walk-ins. These inquiries include billing questions, requests for account balance information, account changes, and problems such as voltage, service, street light, and tree trimming.

Major Work Performed:

- Determine customer concerns/complaints - walk in, mail, phone
- Contact customer/gather information
- Identify resolution
- Coordinate with contractors/suppliers/crews
- Verify customer satisfaction
- Maintain documentation/reconis
- Open order
- Document contact
- Perform credit check
- Analyze account
- Document contact
- Determine cause of problem
- Analyze customer complaints

See Related Activities:



(CODE BLOCK REFERENCE: *ABM Activity Definitions*)

Process Group	DISTRIBUTE ELECTRICITY	Index:
Major Process	Operate & Maintain Distribution Facilities	
Business Process	Operate Distribution Facilities	Date: 12/02/97

Activity:	Develop & Maintain Distribution Operating Inspection & Maintenance Procedures	Activity Code: 455
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Activity Description:

This activity involves all tasks associated with inspecting distribution lines and substation operating, inspection and maintenance procedures. It also includes all tasks associated with the creation/maintenance of computerized materials to ensure proper cost estimating and property record posting. (Distribution system includes the deadend structure feeding the distribution substation high side to the secondary main).

Major Work Performed:

- Develop operation procedures
- Update procedures
- Distribute and communicate information
- Develop inspection procedures
- Develop and maintain switching instructions
- Develop and maintain emergency system restoration procedures
- Develop/update department work procedures

See Related Activities:

CODE BLOCK REFERENCE: AEM Activity Definition

Process Group	DISTRIBUTE ELECTRICITY	Index:
Major Process	Operate & Maintain Distribution Facilities	
Business Process	Maintain Distribution Facilities	Date: 12/08/97

Activity: Maintain Substation Distribution Equipment - Corrective Activity Code: 487

Activity Description:

This activity includes all tasks associated with correcting failures and other problems with distribution substation equipment facilities. It includes repair/corrective work done on breakers, regulators, transformers and other substation equipment. (Distribution Substation: between and including the deadend structures feeding the distribution substation (high side) and the deadend structure leaving the substation).

Major Work Performed:

Plan & schedule the work
Perform diagnostic testing
Record the results
Analyze data
Inspect equipment
Maintain equipment
Obtain proper tools
Travel to/from location
Prepare & perform switching
Respond to emergency other than caused by external parties or storms
Standby
Provide engineering & design support

See Related Activities:

502 Make Emergency Substation Distribution Equipment Repairs - Caused by External Party
509 Make Emergency Substation Distribution Equipment Repairs - Storm

CODE BLOCK REFERENCE: AIMS Activity Definitions

Process Group	DISTRIBUTE ELECTRICITY	Index:
Major Process	Operate & Maintain Distribution Facilities	
Business Process	Maintain Distribution Facilities	Date: 12/08/97

Activity: Test, Treat & Restore Wooden Distribution Pole	Activity Code: 471
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Activity Description: This activity includes all work performed to test, treat & restore wooden distribution poles.
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Major Work Performed: Supervise/field check Process paperwork Perform following by vendor: Test & treat poles Filings of reports Follow-up by inspectors Submitting reports Restore poles Provide engineering & design support

See Related Activities:

CODE BLOCK REFERENCE: ABM Activity Definitions

Process Group	DISTRIBUTE ELECTRICITY	Index:
Major Process	Operate & Maintain Distribution Facilities	
Business Process	Maintain Distribution Facilities	Date: 12/06/97

Activity:	Maintain Distribution Overhead Lines - Corrective	Activity Code:	475
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Activity Description:

This activity includes all tasks associated with correcting failures and other problems with distribution overhead line facilities. It includes repair/corrective work done on equipment such as poles, cables, regulators, etc., but excludes any transformer and meter work which are covered under separate activities. It includes emergency/failure investigation/inspection other than those caused by external parties or storms. (Distribution line: after the descend structure from the distribution substation to the secondary main).

Major Work Performed:

Engineering functions & calculations
Install mobile station
Obtain permits other than environmental or land use
Maintain the equipment
Obtain construction access/trimming
Travel to/from site
Survey job/stake
Respond to emergency other than caused by external parties or storms
Prepare cost estimates
Inspection
Set up right-of-way clearing
Perform outage analysis
Plan & schedule the work/construction project management
Analyze data
Obtain proper material & equipment/tools
Provide engineering & design support
Field check
Prepare/perform switching
Install towers/station facilities/poles
Install & commission fixtures and equipment
String wire
Prepare metering scheme work
Install assoc. elec. equipment
Inspect job
Prepare as-builts
Manage correspondence/paperwork
Notify public (PR)
Close out jobs
Perform removals
Repair, replace cables/splices
Perform diagnostic testing
Record the results

See Related Activities:

CODE BLOCK REFERENCE: ABW Activity Definitions

Process Group	DISTRIBUTE ELECTRICITY	Index:
Major Process	Operate & Maintain Distribution Facilities	
Business Process	Maintain Distribution Facilities	Date: 12/06/97

Activity: Perform Vegetation Management - Distribution **Activity Code:** 494

Activity Description:

This activity includes all work performed for maintenance of vegetation along distribution lines. This includes coordinating efforts with subcontracted tree trimming crews and the costs for contract work. (Distribution Line: after the deadend structure from the distribution substation to the secondary main)

Major Work Performed:

- Calculate circuit miles
- Prepare bid
- Prepare contracts
- Attend pre-bid meetings
- Respond to damage complaints
- Dispatch crews
- Plan & schedule work
- Perform ground restoration
- Trim trees
- Perform field inspections
- Remove trees
- Spray trees (herbicide)
- Secure land owners permission
- Maintain grass
- Perform substation plant control
- Perform land management
- Perform switching
- Standby

See Related Activities:

CODE BLOCK REFERENCE: AEM Activity Definitions

Process Group	DISTRIBUTE ELECTRICITY	438 kWh/Year
Major Process	Operate & Maintain Distribution Facilities	Index:
Business Process	Maintain Distribution Facilities	Date: 12/08/97

Activity: Maintain Distribution Underground Lines - Corrective **Activity Code:** 476

Activity Description:

This activity includes all tasks associated with correcting failures and other problems with distribution underground line facilities. It includes repair/corrective work done on equipment such as conduits, cables, regulators, etc., but excludes any transformer or meter work which are covered under separate activities. It includes emergency/failure investigation/inspection other than those caused by external parties or storms. (Distribution line: after the deadend structure from the distribution substation to the secondary main).

Major Work Performed:

Engineering functions & calculations
Install mobile station
Obtain permits other than environmental or land use
Maintain the equipment
Obtain construction access/trimming
Travel to/from site
Survey jobsite
Respond to emergency other than caused by external parties or storms
Prepare cost estimates
Set up right-of-way clearing
Perform outage analysis
Plan & schedule the work/construction project management
Analyze data
Obtain proper material & equipment/tools
Provide engineering & design support
Field check
Dig trenches/excavate
Prepare/perform switching
Install towers/station facilities/poles
Install & commission fixtures and equipment
String wire
Prepare metering scheme work
Install assoc. e.e.d. equipment
Inspect job
Prepare as-builts
Manage correspondence/paperwork
Notify public (PR)
Close out jobs
Perform removals
Repair, replace cables/splices
Perform diagnostic testing
Record the results

See Related Activities:

470 Repair Distribution Data Recording Equipment

CODE BLOCK REFERENCE: ADM Activity Definitions

Process Group	DISTRIBUTE ELECTRICITY	Index:
Major Process	Operate & Maintain Distribution Facilities	
Business Process	Maintain Distribution Facilities	Date: 12/06/97

Activity: Maintain Distribution Tools & Equipment **Activity Code:** 492

Activity Description:
This activity includes all tasks in support of the maintenance of tools and equipment.

Major Work Performed:
Repair, test & calibrate equipment
Dielectric testing of rubber goods

See Related Activities:

T&D O&M EXPENSE ELEMENT DESCRIPTIONS

CODE	DESCRIPTION
501	<p>Outside Services - General</p> <p>Outside services, which are not assignable to the other specific 500 or 600 series expense elements. Examples include audit fees, advertising outside printing, and registration fees for seminars and training classes. Cost type 550 should be used for services received from affiliated companies.</p>
150	<p>Labor Cost</p> <p>all labor hours for BU and Merit employees that are costed using standard rates. The payroll system will automatically generate this code and therefore, should not be entered on timesheets. However, for budgeting, this expense element must be input for all productive hours.</p>
901	<p>Amortization of Deferred Debits</p>
506	<p>Outside Services - Engineering</p> <p>Engineering consultant services and costs associated with the engineering study and design of facilities. This expense type includes rental transportation costs incurred by the contractor. Cost type 550 should be used for services received from affiliated companies.</p>
451	<p>IS Expense - Production & Development</p> <p>Information Services charges for usage and equipment (e.g. batch processing, disk storage, terminal lease rent, LAN connection fee, etc.) and in-house systems development work.</p>
201	<p>Material Issues/Purchases</p> <p>Materials purchased or issued through the ERP system (includes vehicles but not automotive supplies, etc.)</p>
905	<p>Other Operating Revenue, Nonreg Revenue & Other Credits</p>
505	<p>Outside Services - Construction</p> <p>Outside contractor costs incurred for the construction of facilities. This expense type includes rental transportation costs incurred by the contractor. Cost type 550 should be used for services received from affiliated companies.</p>

Hawaiian Electric Company, Inc.
2007 Test Year

138kv OVERHEAD TRANSMISSION LINE AGE

	(A)	(B)	(C)	(D)	(E)		(F)		(G)		(H)		(I)		(J)		(K)		(L)	(M)	(N)	(O) (P) (Q)					(R)	(S)	
		Year		Cum	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Circuit		Installed	Length	Miles	2000	Mi-Yrs	2001	Mi-Yrs	2002	Mi-Yrs	2003	Mi-Yrs	2004	Mi-Yrs	2005	Mi-Yrs	2006	Mi-Yrs	2007	Mi-Yrs	Yrs	Yrs	Yrs	Yrs	Yrs	Yrs	Yrs	Yrs	Yrs
1	Waiau-Koolau	1958	17.2	17.2	42	722.4	43	739.6	44	756.8	45	774.0	46	791.2	47	808.4	48	825.6	49	842.8	17.2								
2	Waiau-Koolau-Pukele	1960	19.4	36.6	40	776.0	41	795.4	42	814.8	43	834.2	44	853.6	45	873	46	892.4	47	911.8	19.4								
3	Waiau-Wahiawa	1960	12.2	48.8	40	488.0	41	500.2	42	512.4	43	524.6	44	536.8	45	549	46	561.2	47	573.4	12.2								
4	Kahe-Waiiau	1961	18.8	67.6	39	733.2	40	752.0	41	770.8	42	789.6	43	808.4	44	827.2	45	846	46	864.8	18.8								
5	Kahe-Halawa#1	1962	20.6	88.2	38	782.8	39	803.4	40	824.0	41	844.6	42	865.2	43	885.8	44	906.4	45	927	20.6								
6	Kahe-Wahiawa	1963	17.6	105.8	37	651.2	38	668.8	39	686.4	40	704.0	41	721.6	42	739.2	43	756.8	44	774.4	17.6								
7	Koolau-Pukele	1965	6.3	112.1	35	220.5	36	226.8	37	233.1	38	239.4	39	245.7	40	252	41	258.3	42	264.6	6.3								
8	Kahe-Halawa#2	1971	11.6	123.7	29	336.4	30	348.0	31	359.6	32	371.2	33	382.8	34	394.4	35	406	36	417.6	11.6								
9	Halawa-Iwilei	1972	10.8	134.5	28	302.4	29	313.2	30	324.0	31	334.8	32	345.6	33	356.4	34	367.2	35	378	10.8								
10	Halawa-School	1972	5.4	139.9	28	151.2	29	156.6	30	162.0	31	167.4	32	172.8	33	178.2	34	183.6	35	189	5.4								
11	School-Iwilei	1972	0.6	140.5	28	16.8	29	17.4	30	18.0	31	18.6	32	19.2	33	19.8	34	20.4	35	21	0.6								
12	Waiau Gas Turbine	1972	0.3	140.8	28	8.4	29	8.7	30	9.0	31	9.3	32	9.6	33	9.9	34	10.2	35	10.5	0.3								
13	Halawa-Koolau	1972	9.6	150.4	28	268.8	29	278.4	30	288.0	31	297.6	32	307.2	33	316.8	34	326.4	35	336	9.6								
14	Halawa-Makalapa	1973	4	154.4	27	108.0	28	112.0	29	116.0	30	120.0	31	124.0	32	128	33	132	34	136	4.0								
15	Waiau-Makalapa	1975	4	158.4	25	100.0	26	104.0	27	108.0	28	112.0	29	116.0	30	120	31	124	32	128	4.0								
16	Kahe-CEIP#1	1977	4.2	162.6	23	96.6	24	100.8	25	105.0	26	109.2	27	113.4	28	117.6	29	121.8	30	126	4.2								
17	Kahe-CEIP#2	1977	4.4	167	23	101.2	24	105.6	25	110.0	26	114.4	27	118.8	28	123.2	29	127.6	30	132	4.4								
18	Iwilei-Makalapa	1985	7	174	15	105.0	16	112.0	17	119.0	18	126.0	19	133.0	20	140	21	147	22	154		7.0							
19	Kalaeloa-CEIP	1989	2.8	176.8	11	30.8	12	33.6	13	36.4	14	39.2	15	42.0	16	44.8	17	47.6	18	50.4			2.8						
20	AES-Kalaeloa	1991	0.6	177.4	9	5.4	10	6.0	11	6.6	12	7.2	13	7.8	14	8.4	15	9	16	9.6			0.6						
21	AES-HRRV	1991	0.2	177.6	9	1.8	10	2.0	11	2.2	12	2.4	13	2.6	14	2.8	15	3	16	3.2			0.2						
22	AES-CEIP	1991	2.2	179.8	9	19.8	10	22.0	11	24.2	12	26.4	13	28.6	14	30.8	15	33	16	35.2			2.2						
23	Waiau-Makalapa#2	1992	4.5	184.3	8	36.0	9	40.5	10	45.0	11	49.5	12	54.0	13	58.5	14	63	15	67.5			4.5						
24	CEIP-Ewa Nui (Part 1)	1995	6.5	190.8	5	32.5	6	39.0	7	45.5	8	52.0	9	58.5	10	65	11	71.5	12	78				6.5					
25	Kalaeloa-Ewa Nui (Part 1)	1995	8.3	199.1	5	41.5	6	49.8	7	58.1	8	66.4	9	74.7	10	83	11	91.3	12	99.6				8.3					
26	Waiau-Ewa Nui #1 (Part 2)	1995	7.2	206.3	5	36.0	6	43.2	7	50.4	8	57.6	9	64.8	10	72	11	79.2	12	86.4				7.2					
27	Waiau-Ewa Nui #2 (Part 2)	1995	7.3	213.6	5	36.5	6	43.8	7	51.1	8	58.4	9	65.7	10	73	11	80.3	12	87.6				7.3					
28	Total Mile Years					6209.2		6422.8		6636.4		6850.0		7063.6		7277.2		7490.8		7704.4	167.0	0.0	7.0	10.3	29.3	0.0	0.0		
29	Average Age OH 138kV					29.1		30.1		31.1		32.1		33.1		34.1		35.1		36.1	78.2%	0.0%	3.3%	4.8%	13.7%	0.0%	0.0%		

138kV UNDERGROUND TRANSMISSION LINE AGE

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(A)	(B)	(C) PO Date of Repl	(D)	(E)	(F)	(G)	(H)	(I)		(J)	(K)	(L)	(M)	(N)	(O)	(P)	(Q)
<u>Description</u>	<u>Purchased</u>		<u>2000</u>	<u>2001</u>	<u>2002</u>	<u>2003</u>	<u>2004</u>	<u>2005</u>	<u>Fcst</u> <u>2006</u>	<u>Fcst</u> <u>2007</u>	<u>30+</u> <u>Yrs</u>	<u>25+</u> <u>Yrs</u>	<u>20+</u> <u>Yrs</u>	<u>15+</u> <u>Yrs</u>	<u>10+</u> <u>Yrs</u>	<u>5+</u> <u>Yrs</u>	<u>0+</u> <u>Yrs</u>
1 Waiau 3	12/1/1947	1/12/2004	53	54	55	56	0	1	2	3							1
2 Waiau 4	10/25/1950	5/9/2005	50	51	52	53	54	0	1	2							1
3 Honolulu 8	12/17/1954		46	47	48	49	50	51	52	53	1						
4 Honolulu 9	11/7/1957		43	44	45	46	47	48	49	50	1						
5 Waiau 5	9/1/1959		41	42	43	44	45	46	47	48	1						
6 CEIP	11/25/1959		41	42	43	44	45	46	47	48	1						
7 CEIP	11/25/1959		41	42	43	44	45	46	47	48	1						
8 Kahe	11/25/1959		41	42	43	44	45	46	47	48	1						
9 Kahe	11/25/1959		41	42	43	44	45	46	47	48	1						
10 Waiau 6	6/23/1961		39	40	41	42	43	44	45	46	1						
11 Waiau	1/19/1962		38	39	40	41	42	43	44	45	1						
12 Koolau	1/30/1962		38	39	40	41	42	43	44	45	1						
13 Koolau	11/8/1962		38	39	40	41	42	43	44	45	1						
14 Waiau	11/8/1962		38	39	40	41	42	43	44	45	1						
15 Kahe 1	3/4/1963		37	38	39	40	41	42	43	44	1						
16 Kahe 2	9/15/1964		36	37	38	39	40	41	42	43	1						
17 Koolau	10/21/1964		36	37	38	39	40	41	42	43	1						
18 Halawa	3/15/1965		35	36	37	38	39	40	41	42	1						
19 Halawa	3/15/1965		35	36	37	38	39	40	41	42	1						
20 Pukele	3/15/1965		35	36	37	38	39	40	41	42	1						
21 Pukele	3/15/1965		35	36	37	38	39	40	41	42	1						
22 Waiau 7	10/9/1966		34	35	36	37	38	39	40	41	1						
23 Pukele	8/28/1968		32	33	34	35	36	37	38	39	1						
24 Wahiawa	8/28/1968		32	33	34	35	36	37	38	39	1						
25 Waiau 8	11/20/1968		32	33	34	35	36	37	38	39	1						
26 Kahe 3	8/29/1970		30	31	32	33	34	35	36	37	1						
27 Iwilei	8/4/1971		29	30	31	32	33	34	35	36	1						

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(A)	(B)	(C) PO Date of Repl	(D)	(E)	(F)	(G)	(H)	(I)			(J)	(K)	(L)	(M)	(N)	(O)	(P)	(Q)	
Description	Purchased		2000	2001	2002	2003	2004	2005	2006	2007	30+ Yrs	25+ Yrs	20+ Yrs	15+ Yrs	10+ Yrs	5+ Yrs	0+ Yrs		
28 Pukele	11/6/1971		29	30	31	32	33	34	35	36	1								
29 Kahe 4	6/25/1972		28	29	30	31	32	33	34	35	1								
30 School	11/27/1972		28	29	30	31	32	33	34	35	1								
31 Waiau 9	6/20/1973		27	28	29	30	31	32	33	34	1								
32 Waiau 10	12/12/1973		27	28	29	30	31	32	33	34	1								
33 Wahiawa	1/1/1974		26	27	28	29	30	31	32	33	1								
34 Makalapa	10/31/1974		26	27	28	29	30	31	32	33	1								
35 Makalapa	10/31/1974		26	27	28	29	30	31	32	33	1								
36 Kahe 5	12/30/1974		26	27	28	29	30	31	32	33	1								
37 Kahe 6	2/21/1981		19	20	21	22	23	24	25	26		1							
38 Archer	10/24/1988		12	13	14	15	16	17	18	19				1					
39 Archer	10/24/1988		12	13	14	15	16	17	18	19				1					
40 Archer	7/7/1992		8	9	10	11	12	13	14	15					1				
41 Koolau	10/19/1992		8	9	10	11	12	13	14	15					1				
42 Wahiawa	10/19/1992		8	9	10	11	12	13	14	15					1				
43 Ewa Nui	7/11/1994		6	7	8	9	10	11	12	13					1				
44 School B	11/27/1972	7/4/1994	6	7	8	9	10	11	12	13					1			Repl. 6/99	
45 Makalapa 1	10/13/1974	3/17/2000	0	1	2	3	4	5	6	7						1		Repl. 12/00	
46 Iwilei A	8/4/1971	3/21/2001	29	30	31	2	3	4	5	6						1		Repl. 1/03	
Total Age			1377	1423	1469	1485	1474	1465	1511	1557									
# of Tsfs			46	46	46	46	46	46	46	46	34	1	0	2	5	2	2		
Avg. Age			29.9	30.9	31.9	32.3	32.0	31.8	32.8	33.8	74%	2%	0%	4%	11%	4%	4%		

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(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)	(L)	(M)	(N)	(O)	(P)	(Q)	(R)	(S)	(T)
		PO	PO																
		Date of	Repl. Tsf	2000	2001	2002	2003	2004	2005	2006	2007	30+	25+	20+	15+	10+	5+	0+	
Description	kV											Yrs	Yrs	Yrs	Yrs	Yrs	Yrs	Yrs	
1 MANOA 1 4KV	11/4	9/20/35		65	66	67	68	69	70	71	72	1							
2 *BWS - ALAPAI	*11/4	8/21/42		58	59	60	61	62	63	64	65	1							
3 IWILEI 1 4KV	11/4	10/22/43		57	58	59	60	61	62	63	64	1							
4 *BWS - WAHIAWA WELLS #2	*46/4	7/21/44		56	57	58	59	60	61	62	63	1							
5 *BWS - PUNALUU	*46/4	1/29/45		55	56	57	58	59	60	61	62	1							
6 *PAC. CONCRETE	*46/11	2/21/45		55	56	57	58	59	60	61	62	1							
7 KAILUA 1 4KV	46/4	3/19/45		55	56	57	58	59	60	61	62	1							
8 IWILEI 2 4KV	11/4	3/2/46		54	55	56	57	58	59	60	61	1							
9 MUSEUM PARK	11/4	3/2/46		54	55	56	57	58	59	60	61	1							
10 *BWS - MILILANI	*46/4	1/15/47		53	54	55	56	57	58	59	60	1							
11 LAELAE 1	46/4	1/15/47		53	54	55	56	57	58	59	60	1							
12 WOODLAWN 3	46/4	12/8/47		53	54	55	56	57	58	59	60	1							
13 AINA KOA 4KV	46/4	1/6/48		52	53	54	55	56	57	58	59	1							
14 KALAMA 2	46/4	5/6/49		51	52	53	54	55	56	57	58	1							
15 KAIMUKI 1	46/4	10/6/49		51	52	53	54	55	56	57	58	1							
16 AIKAHI 1	46/4	12/22/50		50	51	52	53	54	55	56	57	1							
17 AIKAHI 2	46/4	3/31/51		49	50	51	52	53	54	55	56	1							
18 KAMOHO 2	46/4	5/22/51		49	50	51	52	53	54	55	56	1							
19 AIKAHI 3	46/4	12/31/51		49	50	51	52	53	54	55	56	1							
20 KAHALA 1 4KV	46/4	12/31/51		49	50	51	52	53	54	55	56	1							
21 KAIMUKI 2	46/4	12/31/51		49	50	51	52	53	54	55	56	1							
22 KAILUA 2 4KV	46/4	5/14/52		48	49	50	51	52	53	54	55	1							
23 WAIALAE 2	46/4	7/10/52		48	49	50	51	52	53	54	55	1							
24 MANOA 2 4KV	11/4	8/12/52		48	49	50	51	52	53	54	55	1							
25 KAPIOLANI 1 4KV	46/4	12/16/52		48	49	50	51	52	53	54	55	1							
26 *BIG 3	*46/4	6/17/53		47	48	49	50	51	52	53	54	1							
27 WOODLAWN 1	46/4	6/17/53		47	48	49	50	51	52	53	54	1							
28 *WILSON TUNNEL 2	*46/4	8/21/53		47	48	49	50	51	52	53	54	1							

* = Single Customer

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			PO																
			Date of										30+	25+	20+	15+	10+	5+	0+
<u>Description</u>	<u>kV</u>	<u>Date</u>	<u>Repl. Tsf</u>	<u>2000</u>	<u>2001</u>	<u>2002</u>	<u>2003</u>	<u>2004</u>	<u>2005</u>	<u>2006</u>	<u>2007</u>	<u>Yrs</u>	<u>Yrs</u>	<u>Yrs</u>	<u>Yrs</u>	<u>Yrs</u>	<u>Yrs</u>	<u>Yrs</u>	<u>Yrs</u>
29 KUNIA	46/11	10/6/53	12/24/57	43	44	45	46	47	48	49	50	1							
30 PUUNUI 1	46/4	7/3/54		46	47	48	49	50	51	52	53	1							
31 *HONOULIULI	*46/12	2/14/55		45	46	47	48	49	50	51	52	1							
32 *HUNA	*46/4	2/14/55		45	46	47	48	49	50	51	52	1							
33 KALIH I	46/4	2/14/55		45	46	47	48	49	50	51	52	1							
34 KAPIOLANI 2 4KV	46/4	2/14/55		45	46	47	48	49	50	51	52	1							
35 QUARRY	46/12	2/14/55	1/23/57	43	44	45	46	47	48	49	50	1							
36 WOODLAWN 4	46/4	2/14/55		45	46	47	48	49	50	51	52	1							
37 KAMOHO 1	46/4	6/10/55		45	46	47	48	49	50	51	52	1							
38 IWILEI T2	46/11	9/23/55		45	46	47	48	49	50	51	52	1							
39 KALAMA 1	46/4	1/1/56		44	45	46	47	48	49	50	51	1							
40 PUUNUI 2	46/4	4/23/56		44	45	46	47	48	49	50	51	1							
41 WOODLAWN 2	46/4	4/23/56		44	45	46	47	48	49	50	51	1							
42 *CAMP CATLIN	*46/11	1/23/57	9/20/05	43	44	45	46	47	0	1	2							1	
43 *CAMP SMITH 1	*46/11	10/28/57		43	44	45	46	47	48	49	50	1							
44 WAIMANALO BCH 2	46/12	12/24/57	8/1/03	43	44	45	0	1	2	3	4							1	
45 LAELAE 2	46/4	3/10/58		42	43	44	45	46	47	48	49	1							
46 KALIH I 2	46/4	4/30/58		42	43	44	45	46	47	48	49	1							
47 MAPUNAPUNA 1	46/11	11/18/58		42	43	44	45	46	47	48	49	1							
48 WAHIAWA 1	46/12	11/18/58		42	43	44	45	46	47	48	49	1							
49 WAHIAWA 2	46/12	11/18/58		42	43	44	45	46	47	48	49	1							
50 NUUANU 1	46/12	4/2/59		41	42	43	44	45	46	47	48	1							
51 *HAWN CEMENT 1	*46/4	10/9/59		41	42	43	44	45	46	47	48	1							
52 WAIALAE 1	46/4	10/9/59		41	42	43	44	45	46	47	48	1							
53 MAKALAPA 2	46/11	10/26/59		41	42	43	44	45	46	47	48	1							
54 *STANDARD OIL 1	*46/12	10/27/59		41	42	43	44	45	46	47	48	1							
55 *STANDARD OIL 2	*46/12	10/27/59		41	42	43	44	45	46	47	48	1							
56 *FORT SHAFTER 2	*46/12	11/25/59		41	42	43	44	45	46	47	48	1							

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(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)	(L)	(M)	(N)	(O)	(P)	(Q)	(R)	(S)	(T)
			PO											Based on 2007					
<u>Description</u>	<u>kV</u>	<u>PO</u>	<u>Date of</u>										<u>30+</u>	<u>25+</u>	<u>20+</u>	<u>15+</u>	<u>10+</u>	<u>5+</u>	<u>0+</u>
		<u>Date</u>	<u>Repl. Tsf</u>	<u>2000</u>	<u>2001</u>	<u>2002</u>	<u>2003</u>	<u>2004</u>	<u>2005</u>	<u>2006</u>	<u>2007</u>	<u>Yrs</u>	<u>Yrs</u>	<u>Yrs</u>	<u>Yrs</u>	<u>Yrs</u>	<u>Yrs</u>	<u>Yrs</u>	<u>Yrs</u>
57 NUUANU 2	46/12	11/25/59		41	42	43	44	45	46	47	48	1							
58 WAIMANALO BCH 1	46/12	11/25/59		41	42	43	44	45	46	47	48	1							
59 WILIWILI	46/12	11/25/59		41	42	43	44	45	46	47	48	1							
60 WEST LOCH	46/11	5/13/60		40	41	42	43	44	45	46	47	1							
61 McCULLY 4	46/12	9/30/60		40	41	42	43	44	45	46	47	1							
62 EWA BEACH 1	46/12	10/10/60		40	41	42	43	44	45	46	47	1							
63 KAKAAKO 3	46/11	10/10/60		40	41	42	43	44	45	46	47	1							
64 KAPALAMA 1	46/11	10/10/60		40	41	42	43	44	45	46	47	1							
65 KEEHI 1	46/11	10/10/60		40	41	42	43	44	45	46	47	1							
66 MAKALAPA 1	46/11	10/10/60		40	41	42	43	44	45	46	47	1							
67 MAKALOA 2	46/12	10/10/60		40	41	42	43	44	45	46	47	1							
68 McCULLY 2	46/12	10/10/60		40	41	42	43	44	45	46	47	1							
69 KUILIMA 2	46/11	2/15/62		38	39	40	41	42	43	44	45	1							
70 SAND ISLAND 1	46/11	1/10/63		37	38	39	40	41	42	43	44	1							
71 WAIALUA 2	46/11	1/10/63		37	38	39	40	41	42	43	44	1							
72 WAIPIO	46/12	1/10/63		37	38	39	40	41	42	43	44	1							
73 KANEOHE 1	46/12	10/17/63		37	38	39	40	41	42	43	44	1							
74 KAPAHULU 2	46/12	10/17/63		37	38	39	40	41	42	43	44	1							
75 SAND ISLAND 2	46/11	10/17/63		37	38	39	40	41	42	43	44	1							
76 AIEA 1	46/11	12/8/64		36	37	38	39	40	41	42	43	1							
77 KAPAHULU 1	46/12	12/8/64		36	37	38	39	40	41	42	43	1							
78 WAHIAWA 3	46/12	12/8/64		36	37	38	39	40	41	42	43	1							
79 WAILUPE	46/12	12/8/64		36	37	38	39	40	41	42	43	1							
80 *MOKAPU 1	*46/11	11/8/65		35	36	37	38	39	40	41	42	1							
81 KAMILOIKI	46/12	11/8/65		35	36	37	38	39	40	41	42	1							
82 KAPAHULU 3	46/12	11/8/65		35	36	37	38	39	40	41	42	1							
83 WAIMANO 1	46/11	11/8/65		35	36	37	38	39	40	41	42	1							
84 WAIPAHU 1	46/12	11/8/65		35	36	37	38	39	40	41	42	1							

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			PO											Based on 2007					
Description	kV	PO Date	Date of Repl. Tsf	2000	2001	2002	2003	2004	2005	2006	2007	30+ Yrs	25+ Yrs	20+ Yrs	15+ Yrs	10+ Yrs	5+ Yrs	0+ Yrs	
85 KAPALAMA 2	46/11	7/27/66		34	35	36	37	38	39	40	41	1							
86 KOOLAU	46/12	7/27/66		34	35	36	37	38	39	40	41	1							
87 MAKALOA 3	46/12	7/27/66		34	35	36	37	38	39	40	41	1							
88 PIIKOI 1	46/12	7/27/66		34	35	36	37	38	39	40	41	1							
89 WAIALUA 3	46/11	7/27/66		34	35	36	37	38	39	40	41	1							
90 AIEA 2	46/11	4/27/67		33	34	35	36	37	38	39	40	1							
91 HOAEAE 1	46/12	4/27/67		33	34	35	36	37	38	39	40	1							
92 HOAEAE 2	46/12	4/27/67		33	34	35	36	37	38	39	40	1							
93 WAI'AU DISTR (CB1229)	46/11	4/27/67		33	34	35	36	37	38	39	40	1							
94 WAIMANO 2	46/11	4/27/67		33	34	35	36	37	38	39	40	1							
95 IWILEI T1	46/11	10/17/67		33	34	35	36	37	38	39	40	1							
96 *EAST-WEST CTR 2	*46/12	1/12/68		32	33	34	35	36	37	38	39	1							
97 KAPAHULU 4	46/12	1/12/68		32	33	34	35	36	37	38	39	1							
98 MAKALOA 4	46/12	1/12/68		32	33	34	35	36	37	38	39	1							
99 MIKILUA 2	46/12	1/12/68		32	33	34	35	36	37	38	39	1							
100 MAKAKILO 2	46/12	10/1/68		32	33	34	35	36	37	38	39	1							
101 MALAKOLE 1	46/12	10/1/68		32	33	34	35	36	37	38	39	1							
102 WAIHEE 2	46/12	10/1/68		32	33	34	35	36	37	38	39	1							
103 AINA KOA	46/12	2/10/69		31	32	33	34	35	36	37	38	1							
104 KEEHI 2	46/11	2/10/69		31	32	33	34	35	36	37	38	1							
105 *FORT SHAFTER 1	*46/12	8/29/69		31	32	33	34	35	36	37	38	1							
106 KEOLU 2	46/12	8/29/69		31	32	33	34	35	36	37	38	1							
107 KEWALO 1	46/12	8/29/69		31	32	33	34	35	36	37	38	1							
108 MAPUNAPUNA 2	46/11	8/29/69		31	32	33	34	35	36	37	38	1							
109 HALEKAUWILA	11/4	9/16/69		31	32	33	34	35	36	37	38	1							
110 *MOKAPU 2	*46/11	2/10/70		30	31	32	33	34	35	36	37	1							
111 KAHE 1	46/12	2/10/70		30	31	32	33	34	35	36	37	1							
112 PIIKOI 2	46/12	2/10/70		30	31	32	33	34	35	36	37	1							

* = Single Customer

Hawaiian Electric Company, Inc.
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DISTRIBUTION SUBSTATION TRANSFORMER AGE

(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)	(L)	(M)	(N)	(O)	(P)	(Q)	(R)	(S)	(T)
		PO	PO																
			Date of																
			Repl. Tsf	2000	2001	2002	2003	2004	2005	2006	2007								
Description	kV	Date										30+	25+	20+	15+	10+	5+	0+	
												Yrs	Yrs	Yrs	Yrs	Yrs	Yrs	Yrs	
113 KANEOHE 2	46/12	4/30/70		30	31	32	33	34	35	36	37	1							
114 KUAPA 1	46/12	4/30/70		30	31	32	33	34	35	36	37	1							
115 KUHIO 1	46/12	4/30/70		30	31	32	33	34	35	36	37	1							
116 *EAST-WEST CTR 1	*46/12	5/13/70	10/14/04	30	31	32	33	0	1	2	3							1	
117 AIEA 3	46/11	5/13/70		30	31	32	33	34	35	36	37	1							
118 MAKAHA 1	46/12	5/13/70		30	31	32	33	34	35	36	37	1							
119 WAIPAHU 2	46/12	5/13/70		30	31	32	33	34	35	36	37	1							
120 EWA BEACH 2	46/12	7/16/71		29	30	31	32	33	34	35	36	1							
121 KAILUA	46/12	7/16/71		29	30	31	32	33	34	35	36	1							
122 KAKAAKO 2	46/11	7/16/71		29	30	31	32	33	34	35	36	1							
123 KAPALAMA 3	46/11	7/16/71		29	30	31	32	33	34	35	36	1							
124 KAPIOLANI 2	46/12	7/16/71		29	30	31	32	33	34	35	36	1							
125 KEEHI 3	46/11	7/16/71		29	30	31	32	33	34	35	36	1							
126 MILILANI 1	46/12	7/16/71		29	30	31	32	33	34	35	36	1							
127 WAIHEE 1	46/12	7/16/71		29	30	31	32	33	34	35	36	1							
128 WAIMANO 3	46/11	7/16/71		29	30	31	32	33	34	35	36	1							
129 IWILEI 1	138/11	10/6/71		29	30	31	32	33	34	35	36	1							
130 IWILEI 2	138/11	10/6/71		29	30	31	32	33	34	35	36	1							
131 KEEHI 4	46/11	6/16/72		28	29	30	31	32	33	34	35	1							
132 PUOHALA	46/12	6/16/72		28	29	30	31	32	33	34	35	1							
133 QUEENS	46/12	6/16/72		28	29	30	31	32	33	34	35	1							
134 SCHOOL ST 1	46/11	6/16/72		28	29	30	31	32	33	34	35	1							
135 SCHOOL ST 2	46/11	6/16/72		28	29	30	31	32	33	34	35	1							
136 UWAPO 1	46/12	6/16/72	12/3/04	28	29	30	31	0	1	2	3							1	
137 SCHOOL ST T2 4KV	46/4	9/18/72		28	29	30	31	32	33	34	35	1							
138 *BWS - WAIHEE	*46/4	9/20/72		28	29	30	31	32	33	34	35	1							
139 *KUAHUA T1	*46/11	10/3/72		28	29	30	31	32	33	34	35	1							
140 *BWS - KAM. IV	*46/4	10/27/72		28	29	30	31	32	33	34	35	1							

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(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)	(L)	(M)	(N)	(O)	(P)	(Q)	(R)	(S)	(T)
		PO	PO																
			Date of																
			Repl. Tsf	2000	2001	2002	2003	2004	2005	2006	2007	30+	25+	20+	15+	10+	5+	0+	
Description	kV	Date										Yrs	Yrs	Yrs	Yrs	Yrs	Yrs	Yrs	
141 MAKAHA 2	46/12	4/13/73		27	28	29	30	31	32	33	34	1							
142 *HICKAM 1	*46/11	4/18/73		27	28	29	30	31	32	33	34	1							
143 *HICKAM 3	*46/11	4/18/73		27	28	29	30	31	32	33	34	1							
144 HAUULA 1	46/11	4/18/73		27	28	29	30	31	32	33	34	1							
145 HILA 1	46/11	4/18/73		27	28	29	30	31	32	33	34	1							
146 KAONOHI 1	46/11	4/18/73		27	28	29	30	31	32	33	34	1							
147 LAKESIDE 1	46/11	4/18/73		27	28	29	30	31	32	33	34	1							
148 MANOA 1	46/12	4/18/73		27	28	29	30	31	32	33	34	1							
149 PAUOA 1 12KV	46/12	4/18/73		27	28	29	30	31	32	33	34	1							
150 PEARL CITY	46/11	4/18/73		27	28	29	30	31	32	33	34	1							
151 *PUULOA 1	*46/11	4/23/73		27	28	29	30	31	32	33	34	1							
152 *PUULOA 3	*46/11	4/23/73		27	28	29	30	31	32	33	34	1							
153 *ALIAMANU	*46/12	3/15/74		26	27	28	29	30	31	32	33	1							
154 AHI 1	46/12	3/15/74		26	27	28	29	30	31	32	33	1							
155 AHI 2	46/12	3/15/74		26	27	28	29	30	31	32	33	1							
156 ENA 4	46/12	3/15/74		26	27	28	29	30	31	32	33	1							
157 KAPAHULU 5	46/12	3/15/74		26	27	28	29	30	31	32	33	1							
158 KUHIO 2	46/12	3/15/74		26	27	28	29	30	31	32	33	1							
159 MILILANI 2	46/12	3/15/74		26	27	28	29	30	31	32	33	1							
160 MOILILI	46/12	3/15/74		26	27	28	29	30	31	32	33	1							
161 WAIKAMALO 1	46/11	3/15/74		26	27	28	29	30	31	32	33	1							
162 IWILEI 3	138/11	8/2/74		26	27	28	29	30	31	32	33	1							
163 KEOLU 1	46/12	3/15/75		25	26	27	28	29	30	31	32	1							
164 HILA 2	46/11	8/29/78		22	23	24	25	26	27	28	29		1						
165 KAPAHULU 6	46/12	8/29/78		22	23	24	25	26	27	28	29		1						
166 KUAPA 2	46/12	6/28/79		21	22	23	24	25	26	27	28		1						
167 WAIKIKI 2	46/12	9/10/79		21	22	23	24	25	26	27	28		1						
168 KANEOHE 3	46/12	4/30/80		20	21	22	23	24	25	26	27		1						

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(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)	(L)	(M)	(N)	(O)	(P)	(Q)	(R)	(S)	(T)
		PO	PO																
		Date of	Repl. Tsf	2000	2001	2002	2003	2004	2005	2006	2007								
Description	kV	Date										30+	25+	20+	15+	10+	5+	0+	
												Yrs	Yrs	Yrs	Yrs	Yrs	Yrs	Yrs	
169 MANOA 2	46/11	4/30/80		20	21	22	23	24	25	26	27		1						
170 SCHOOL ST 3	46/11	4/30/80		20	21	22	23	24	25	26	27		1						
171 *TRIPLER 1	*46/11	10/25/82		18	19	20	21	22	23	24	25			1					
172 HONOLULU 1	46/11	10/25/82		18	19	20	21	22	23	24	25			1					
173 HONOLULU 2	46/11	10/25/82		18	19	20	21	22	23	24	25			1					
174 KAHALA 1	46/12	4/19/83		17	18	19	20	21	22	23	24			1					
175 *TRIPLER 2	*46/11	2/26/86		14	15	16	17	18	19	20	21			1					
176 PUKELE 2	46/12	2/26/86		14	15	16	17	18	19	20	21			1					
177 KAHALA 2 4KV	46/4	6/9/86	2/5/04	14	15	16	17	0	1	2	3							1	
178 WAIKAMALO 2	46/11	8/5/87		13	14	15	16	17	18	19	20				1				
179 ARCHER 1	46/11	3/11/88		12	13	14	15	16	17	18	19				1				
180 PIIKOI 3	46/12	12/19/88		12	13	14	15	16	17	18	19				1				
181 *BWS - WAHIAWA WELLS	*46/4	2/16/89		11	12	13	14	15	16	17	18				1				
182 *BWS - EWA WTR SYS	*46/4	4/21/89		11	12	13	14	15	16	17	18				1				
183 *BWS - MIL- MAUKA	*46/4	4/21/89		11	12	13	14	15	16	17	18				1				
184 FORT ST 4KV	46/4	4/21/89		11	12	13	14	15	16	17	18				1				
185 HELEMANO 2	46/12	10/10/89		11	12	13	14	15	16	17	18				1				
186 HILA 3	46/11	10/10/89		11	12	13	14	15	16	17	18				1				
187 LAGOON	46/11	10/10/89		11	12	13	14	15	16	17	18				1				
188 FORT ST 2 11KV	46/11	5/5/91		9	10	11	12	13	14	15	16				1				
189 IWILEI 1 11KV	46/11	5/5/91		9	10	11	12	13	14	15	16				1				
190 KAHALA 2	46/12	5/5/91		9	10	11	12	13	14	15	16				1				
191 KUNIA MAKAI 1	46/12	5/5/91		9	10	11	12	13	14	15	16				1				
192 MAKAKILO 1	46/12	5/5/91		9	10	11	12	13	14	15	16				1				
193 KAKAAKO 4	46/11	9/12/91		9	10	11	12	13	14	15	16				1				
194 AIRPORT 1	138/11	10/23/91		9	10	11	12	13	14	15	16				1				
195 AIRPORT 2	138/11	10/23/91		9	10	11	12	13	14	15	16				1				
196 *HAIKU (H3)	*46/12	3/23/92		8	9	10	11	12	13	14	15						1		

* = Single Customer

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(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)	(L)	(M)	(N)	(O)	(P)	(Q)	(R)	(S)	(T)
			PO																
			Date of																
			Repl. Tsf	2000	2001	2002	2003	2004	2005	2006	2007	30+	25+	20+	15+	10+	5+	0+	
<u>Description</u>	<u>kV</u>	<u>Date</u>										<u>Yrs</u>	<u>Yrs</u>	<u>Yrs</u>	<u>Yrs</u>	<u>Yrs</u>	<u>Yrs</u>	<u>Yrs</u>	
197 KUNIA MAKAI 2	46/12	3/23/92		8	9	10	11	12	13	14	15								
198 MALAKOLE 2	46/12	3/23/92		8	9	10	11	12	13	14	15								
199 UPPER KIPAPA 1	46/12	3/23/92		8	9	10	11	12	13	14	15								
200 UPPER KIPAPA 2	46/12	3/23/92		8	9	10	11	12	13	14	15								
201 WAIPIOLANI 1	46/12	3/23/92		8	9	10	11	12	13	14	15								
202 WAIPIOLANI 2	46/12	3/23/92		8	9	10	11	12	13	14	15								
203 ARCHER 2	46/11	8/31/92		8	9	10	11	12	13	14	15								
204 WAIMALU 2	46/11	10/30/92		8	9	10	11	12	13	14	15								
205 *HALAWA (H3)	*46/12	5/17/93		7	8	9	10	11	12	13	14								
206 *IROQUOIS PT	*46/11	5/17/93		7	8	9	10	11	12	13	14								
207 *UH QUARRY 3	*46/12	5/17/93		7	8	9	10	11	12	13	14								
208 FORT WEAVER 1	46/12	5/17/93		7	8	9	10	11	12	13	14								
209 McCULLY 6	46/12	5/17/93		7	8	9	10	11	12	13	14								
210 *WILSON TUNNEL 1	*46/4	5/27/93		7	8	9	10	11	12	13	14								
211 *PENINSULA 1	*46/11	6/7/93		7	8	9	10	11	12	13	14								
212 *UH QUARRY 1	*46/12	6/7/93		7	8	9	10	11	12	13	14								
213 *UH QUARRY 2	*46/12	6/7/93		7	8	9	10	11	12	13	14								
214 *WHEELER	*46/11	6/7/93		7	8	9	10	11	12	13	14								
215 EWA NUI 1	46/12	6/7/93		7	8	9	10	11	12	13	14								
216 HALA 2	46/11	6/7/93		7	8	9	10	11	12	13	14								
217 KAKAAKO 1	46/11	6/7/93		7	8	9	10	11	12	13	14								
218 UWAPO 2	46/12	6/7/93		7	8	9	10	11	12	13	14								
219 WAIAWA 1	46/12	6/7/93		7	8	9	10	11	12	13	14								
220 IWILEI 3	138/25	7/1/94		6	7	8	9	10	11	12	13								
221 IWILEI 4	138/25	7/1/94		6	7	8	9	10	11	12	13								
222 McCULLY 5	46/12	5/10/95		5	6	7	8	9	10	11	12								
223 *HICKAM 2	*46/11	7/31/95		5	6	7	8	9	10	11	12								
224 ENA 3	46/12	7/31/95		5	6	7	8	9	10	11	12								

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DISTRIBUTION SUBSTATION TRANSFORMER AGE

(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)	(L)	(M)	(N)	(O)	(P)	(Q)	(R)	(S)	(T)
		PO	Date of																
		PO	Repl. Tsf	2000	2001	2002	2003	2004	2005	2006	2007	30+	25+	20+	15+	10+	5+	0+	
<u>Description</u>	<u>kV</u>	<u>Date</u>										<u>Yrs</u>	<u>Yrs</u>	<u>Yrs</u>	<u>Yrs</u>	<u>Yrs</u>	<u>Yrs</u>	<u>Yrs</u>	
225 KAHUKU 1	46/11	7/31/95		5	6	7	8	9	10	11	12					1			
226 KAPIOLANI 1	46/12	7/31/95		5	6	7	8	9	10	11	12					1			
227 MIKILUA 1	46/12	7/31/95		5	6	7	8	9	10	11	12					1			
228 WAIKIKI 1	46/12	7/31/95		5	6	7	8	9	10	11	12					1			
229 WAIMEA 1	46/12	7/31/95		5	6	7	8	9	10	11	12					1			
230 CEIP 2	46/12	5/16/97		3	4	5	6	7	8	9	10					1			
231 KAMOKILA 1	46/12	6/23/97		3	4	5	6	7	8	9	10						1		
232 HALA 1	46/11	5/29/98		2	3	4	5	6	7	8	9						1		
233 PIIKOI 4	46/12	5/19/99		1	2	3	4	5	6	7	8						1		
234 WAIKIKI 3	46/12	10/27/99		1	2	3	4	5	6	7	8						1		
235 *GEIGER	*46/12	2/18/00		0	1	2	3	4	5	6	7						1		New
236 WAIMALU 1	46/11	4/30/70	3/23/00	0	1	2	3	4	5	6	7						1		
237 KAMOKU 1	138/25	3/24/00		0	1	2	3	4	5	6	7						1		New
238 KEWALO 3	138/25	7/28/00		0	1	2	3	4	5	6	7						1		
239 *KALAHEO 1	*46/12	7/27/66	12/11/00	0	1	2	3	4	5	6	7						1		
240 *HANUA	*46/12	12/20/00		0	1	2	3	4	5	6	7						1		New
241 *EAST-WEST CTR 3	*46/12	11/12/87	5/1/01	13	0	1	2	3	4	5	6						1		
242 LAKESIDE 2	46/11	8/5/87	6/8/01	13	0	1	2	3	4	5	6						1		
243 *KUAHUA 2	*46/11	7/1/01			0	1	2	3	4	5	6						1		New
244 *HAW METAL RECYC	*46/4	10/9/59	10/9/01	41	0	1	2	3	4	5	6						1		
245 *CAMP SMITH 2	*46/11	9/5/02				0	1	2	3	4	5							1	
246 ENA 1	46/12	8/5/87	5/31/03	13	14	15	0	1	2	3	4							1	
247 KAONOH 2	46/11	12/19/88	9/16/03	12	13	14	0	1	2	3	4							1	
248 ENA 2	46/12	12/21/87	9/19/03	13	14	15	0	1	2	3	4							1	
249 KAMOKILA 2	46/12	10/17/03					0	1	2	3	4							1	New
250 FORT WEAVER 2	46/12	10/31/03					0	1	2	3	4							1	New
251 HELEMANO 1	46/12	10/10/89	1/19/04	11	12	13	14	0	1	2	3							1	
252 FORT ST 1 11KV	46/11	4/14/89	11/7/03	11	12	13	0	1	2	3	4							1	

* = Single Customer

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DISTRIBUTION SUBSTATION TRANSFORMER AGE

(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)	(L)	(M)	(N)	(O)	(P)	(Q)	(R)	(S)	(T)
		PO	PO																
		Date of	Repl. Tsf	2000	2001	2002	2003	2004	2005	2006	2007								
	kV																		
Description																			
253 KEWALO 2	46/12	10/10/89	12/10/03	11	12	13	0	1	2	3	4								1
254 POHAKUPU 2	46/12	10/10/89	1/19/04	11	12	13	14	0	1	2	3								1
255 WAIAWA 2	46/12	10/10/89	1/19/04	11	12	13	14	0	1	2	3								1
256 Mokuone 1	46/12	2/6/04						0	1	2	3								1
257 BP Tank Farm	46/4	5/7/03					0	1	2	3	4								1
258 Ford Island 1	46/12	6/27/05							0	1	2								1
259 Ford Island 2	46/12	6/27/05							0	1	2								1
260 Ford Island 3	46/12	6/27/05							0	1	2								1
261 Ford Island 4	46/12	6/27/05							0	1	2								1
262 Ocean Pointe	46/12	10/18/05							0	1	2								1
263 New Kuahua 1	46/12	5/26/05							0	1	2								1
264 New Kuahua 2	46/12	7/6/01		0	1	2	3	4	5	6							1		
265 Mokapu 3	46/12	7/28/05							0	1	2								1
Total Age				6878	7059	7312	7445	7573	7783	8048	8313								
# of Tsfs				251	253	254	257	258	265	265	265	159	7	6	18	34	16	25	
Avg. Age				27.4	27.9	28.8	29.0	29.4	29.4	30.4	31.4	60%	3%	2%	7%	13%	6%	9%	

* = Single Customer

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Hawaiian Electric Company, Inc.
2007 TEST YEAR

TRANSMISSION AND DISTRIBUTION
OPERATION & MAINTENANCE EXPENSE
ADJUSTMENTS
(\$ Thousands)

OPERATING
ADJUSTMENT

1 Transmission Expense

Transmission Operations Non-Labor

Abandoned Projects	\$	2
removal of performance incentive costs	\$	(39)

Transmission Maintenance Non-Labor

Abandoned Projects	\$	21
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TOTAL TRANSMISSION EXPENSE	\$	(16)
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2 Distribution Expense

Distribution Operations Labor

Duplicate Entry	\$	(68)
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Distribution Operations Non-Labor

Abandoned projects	\$	111
removal of performance incentive costs	\$	(101)

Distribution Maintenance Non-Labor

Abandoned projects	\$	12
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TOTAL DISTRIBUTION EXPENSE	\$	(46)
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actual deferred expense through Nov06: \$2,850,015
deferred expense Dec06 & Jan07 forecast: \$373,861
AFUDC through Jan07: \$43,726
amount to begin amortizing in Feb07: **\$3,267,603**

	Dec-06	Jan-07	Feb-07	Mar-07	Apr-07	May-07	Jun-07	Jul-07	Aug-07	Sep-07	Oct-07	Nov-07	Dec-07
beginning balance	\$2,850,015	3,140,572	\$3,267,603	3,436,665	3,596,771	3,786,167	3,969,188	4,033,951	4,071,714	4,223,386	4,231,598		
forecast	\$269,190	104,671	169,063	160,106	189,396	183,021	64,763	37,763	151,672	8,212	-	-	-
AFUDC	\$21,367	\$22,360											

12-yr / 144 mos amortization

			Feb-07	Mar-07	Apr-07	May-07	Jun-07	Jul-07	Aug-07	Sep-07	Oct-07	Nov-07	Dec-07
Feb-07	monthly												
beg.bal.	forecast												
\$3,267,603		divided by 144 mos:	22,692	22,692	22,692	22,692	22,692	22,692	22,692	22,692	22,692	22,692	22,692
Feb-07	169,063	divided by 143 mos:		1,182	1,182	1,182	1,182	1,182	1,182	1,182	1,182	1,182	1,182
Mar-07	160,106	divided by 142 mos:			1,128	1,128	1,128	1,128	1,128	1,128	1,128	1,128	1,128
Apr-07	189,396	divided by 141 mos:				1,343	1,343	1,343	1,343	1,343	1,343	1,343	1,343
May-07	183,021	divided by 140 mos:					1,307	1,307	1,307	1,307	1,307	1,307	1,307
Jun-07	64,763	divided by 139 mos:						466	466	466	466	466	466
Jul-07	37,763	divided by 138 mos:							274	274	274	274	274
Aug-07	151,672	divided by 137 mos:								1,107	1,107	1,107	1,107
Sep-07	8,212	divided by 136 mos:									60	60	60
TOTAL			22,692	23,874	25,001	26,345	27,652	28,118	28,392	29,499	29,559	29,559	29,559

Total 2007 Amortization 300,249

Annual amortization 2008 & beyond 354,708
(\$29,559 X 12 mos)